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ECONOMIC AND INDUSTRIAL AFFAIRS

No. 1930

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NEED FOR EARTHQUAKE-PROOF CONSTRUCTION STRESSED

Tirana ZERI I POPULLIT in Albanian 20 Jun 79 p 3

[Article by Eduard Sulstarova: "Earthquakes and Antiseismic Measures"]

[Text] Our country's territory is characterized by high seismic activity. This fact is also reflected in the seismic regionalization map of the Socialist People's Republic of Albania.

Bearing this in mind, our people have learned to build, to take "anti-seismic measures." It is in man's power to resist the consequences of earthquakes. But how? We shall try to answer this very interesting question to some extent by what we have gained from experience in the Albanian art of construction and from science. On our soil are ancient cities and villages, such as Gjirokaster, that have resisted well the destructive forces of nature: and other cities and villages have done the same. Age-old bridges and fortresses have suffered not one but several earthquakes, and yet they have withstood them because the ground and the building material were chosen with care during their construction, and quality--the art of construction in the fullest sense of the word--was applied with fanaticism. That is, antiseismic measures were taken. (By "seismic measures" we mean construction done on the basis of special norms taking into account the preservation of the structures and equipment from the destructive force of earthquakes). Some of the principal ones are:

Choice of the site. The intensity of the vibrations also depends on the condition of the soil on which the foundation is built. On strong soils the seismicity coefficient is low, while it increases on weak soils. This fact is also known in detail from the science of construction, which is making better and better use of the seismological data on terrain. The choice of a site is important for construction. Especially important is a knowledge of the seismicity of the area from the historical viewpoint as well. The Agadir (Morocco) earthquake of 29 February 1960 released an amount of energy several hundred times smaller than that released during the Diber earthquake in our country in 1967. The degree of damage in

Agadir was very high because, among other things, it was thought that the city was located in a "quiet" seismic area although it had been hit by a powerful earthquake about two centuries earlier. But the traces of it had disappeared and that fact had been forgotten. So the choice of a site is also helped by the data on seismic regionalization and the time of occurrence of the earthquakes, the epicenter, the extent of propagation of their waves to its periphery, and the consequences to the structures.

The choice of the site for construction does not end with this. An article titled "Values Which Contribute to Town Planning and Architecture" in ZERI I POPULLIT on 28 December 1977 says that in comparison with other nearby inhabited towns, Gjirokaster has resisted the shock of earthquakes for 14 centuries. This is because the city was built well and on strong ground, on rocky soil. In the magazine NDERTUESI [Builder] (No 1, April 1968) an article by Rrahman Hanku, Anthim Konomi and Rifat Bodinaku analyzed the data on the consequences of the earthquake of 30 November 1967 affecting the districts of Diber and Librazhd. In the "shortcomings" in the choice of the site the authors include the location of buildings on rough places and soft ground (rocky in outward appearance, clayey underneath) and the location of some buildings below a rocky area so that they were damaged by rock coming down from above. According to the data on the earthquake of 15 April 1979 which struck the districts of Shkoder, Lezhe and other areas, only two buildings escaped damage in the village of Pentar: they had their foundations on strong soil, on rock. Thus, within one village with a territory of less than 1.5 hectares, the intensity of the tremors varied by not less than 2 points ["balle," a Russian unit]: it was felt as 8 points at the weak spots of Pentar and 6 points on the rocks nearby, the site of the two buildings that suffered no damage.

Thus when we have places with strong soils, there is no reason to build on soft spots. This question has been clearly emphasized in the party's directives. We must apply them strictly. Private ownership, the capitalistic relationships in production, once prevented this, whereas this obstacle has disappeared in the years of the people's rule. We are enjoying this advantage of socialism. This is also evident in our town planning studies, in the planned location of villages and inhabited centers. But it is a question of further perfecting the studies on the choice of construction sites and the knowledge of the seismicity of each region. The fact is that thus far, when the regulatory plans for towns and villages are approved, not even the explanatory reports on the conditions for the execution of the construction give data on the history of the region from the seismic viewpoint. A shortcoming like this must be corrected.

But when no strong ground is to be found, and we must not build on soft soils, on new land cleared of swamp? Yes, we will build. But the norms, the antiseismic measures, are different; the seismicity coefficient will be raised. This must be firmly considered.

The choice of terrain is one measure, but it does not suffice at all when the rules of the art of building and the other antiseismic measures—which this time it is entirely in our power to know and apply—are unknown and not applied. They relate to the quality of the materials used in construction and to the techniques applied, the art of construction.

The party and our socialist government have not only cared and do care for easing of the consequences of earthquakes, but have shown and are showing special care for the study of the seismicity of the site, in order to take the safest antiseismic measures for construction. Special regulations have been formulated and have undergone constant improvement. On the other hand, the party's special care has created conditions for further deepening and broadening the studies on the subject of seismology. To insure objects against earthquakes, our state expends considerable funds. And the consequences of the recent earthquake are being studied with special care by a group of seismological specialists, builders and geologists, and new data will be extracted which will find a place in our regulations on antiseismic construction so that buildings and equipment will resist still better the percussive force of earthquakes. The new structures being erected in regions hit by the earthquake, in accordance with the party's orders, are being made strong enough to resist the percussive force much better than previous structures.

When we speak of the resistance of buildings and equipment to earthquakes, we have in mind particularly the preventive measure relating to the precise enforcement of the technical rules in any construction. It is true that our socialist state takes measures to remove the consequences of earthquakes, but here it is a matter of making their consequences as mild as possible. And there are two ways to make them so: first, to know and apply the Albanian art of building in its entirety; and second, to control this kind of construction as to how the norms and technical conditions are applied, including the antiseismic norms.

Our people, who have inherited the art of antiseismic construction too, have always built houses with wooden studs and so forth (antiseismic studs), which they have placed every 1 to 1.5 meters to the height of the wall throughout its perimeter, have shown special care for binding materials (lime) and other building materials, and have made proper roofs. But since earthquakes seldom recur in one region, this good tradition is beginning to be forgotten in many cases, especially in the construction of rural dwellings. Thus, it has been noted from a study of the consequences of recent earthquakes that those objects have been destroyed or most heavily damaged which did not have antiseismic studs, and those walls which had been built without being well tied together. These violations are due to the fact that the construction brigade, especially in the farm cooperatives and enterprises that are new, have no experience and are not familiar with the antiseismic measures. But there is still something else connected with this: too narrow an understanding of what we call "legality" in construction. The laws on the basis of which

building is done in our country apply to every kind of construction. But in many cases control of the quality of construction is not being exercised: more so in the countryside and less so in the cities (in what is called "private dwellings"). This is a mistake on the part of the town-planning and projecting offices under the executive committees of the district people's councils, which should not be permitted by the ministry of construction. Here, a broader understanding of our national resources is needed, above all, human life, so that it may be saved from the dangers of earthquakes, which are a well-known phenomenon to us. Therefore, no kind of construction must be left without control from the further viewpoint of how the antiseismic measures are applied.

Another important criterion in antiseismic construction is the use of the lightest building materials. The lighter and simpler a building, the better it withstands the percussive force of earthquakes. Hence, a thorough understanding of the party's directives and their precise enforcement are a permanent duty of every builder. We have noted that in a good many villages the roof also is too heavy in its structure--in many cases it is not well supported by the walls either--and this has been the cause of severe damage during earthquakes. Consequently, we have to attach a great deal of importance to the materials used in building structures and other objects.

In our socialist country, not only are the most complete antiseismic measures prescribed so as to place man in the center of the paternal care of the party and Comrade Enver, but their enforcement is also being organized.

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PLAN FULFILLMENT FOR FIRST HALF 1979 REPORTED

Prague RUDE PRAVO in Czech 27 Jul 79 pp 1, 3

[Report of the Federal Statistical Office on the development of the national economy and the fulfillment of the plan of the CSSR in the first half of 1979: "For the Present A Lower Dynamic of Development Than Set Forth In This Year's Plan."]

[Text] The January loss of production has been successfully lowered to less than one third: results in a majority of indicators better than last year, but plan directives unfulfilled: the average wage grew more than labor productivity: a lower number of finished apartments: it is necessary to increase efforts in all sectors.

Prague, 26 July. The development of the national economy was influenced in the first half of this year by the extraordinary restriction of deliveries of fuels and electrical energy at the beginning of the year, brought on by unfavorable weather conditions and unsystematic preparation for the winter period. The dynamic of development has therefore been lower than the plan required. The March decree of the CPCZ Central committee, directed at the fulfillment of the demanding tasks of the state operating plan of the development of the national economy, and measures taken by party, government and economic organs together with increased efforts of workers have made possible, in production branches, the gradual lowering of the January loss.

In certain sectors, especially in investment construction and in the realization of scientific technical progress in the economy, deficiencies of a more long term character persisted. Requirements in the growth of the effectiveness and quality of all work were not fulfilled to the required extent. The relation between the increase in productivity of labor and average wages developed unfavorably.

In comparison with the first half of 1978, industrial production increased by 2.6 percent, construction projects increased by 2.9 percent, the purchase



of animals for slaughter by 2.3 percent and the transportation of goods was lowered by 1.2 percent. In industry, in accordance with the directives of the plan, production developed at the most rapid pace in the machine tool industry, the rubber and plastic materials processing industry, the clothing and textile industries, as well as in several fields included in development programs. The increase of the total volume of industrial production was 1.6 points lower than the plan. The productivity of labor increased by 1.9 percent compared with the first half of 1978, the average wage by 2.9 percent.

The rate of growth of the volume of construction projects remained 2.6 points behind planned directives. The planned increase in construction projects was not achieved especially in construction projects in investment construction, particularly in complex apartment construction. The productivity of labor increased 2.4 percent in comparison with the first half of 1978, the average wage 2 percent.

This year's unfavorable weather conditions have influenced the development of stands of winter grains, beets and perennial forage crops, which it has been necessary to plough under to a far greater extent than in 1978. A shortage of moisture in May worsened the condition of the vegetation of additional agricultural products. The chronological plan of purchase of animals for slaughter and eggs has been fulfilled, the purchase of milk remained below the planned level.

Investment projects and deliveries to the national economy were, in comparison with the first half of 1978, 0.2 percent higher, which includes an increase of 1.7 percent in deliveries of machines and apparatus. Even though the fulfillment of the state plan was greater at construction projects which have been established as essential tasks than at other construction projects, several important facilities were not introduced into operation within the planned period of time.

The turnover of foreign trade increased by 7.3 percent compared with the first half of 1978, 6.9 percent of this with socialist countries. This increase was influenced by price development on world markets. The increase of the export capability of our products, especially those of the machine tool industry, remains a long term task, particularly in view of the continued advance of the increase of import prices over the prices of our exports. The monetary incomes of the population were 2.8 percent higher compared with the first half of 1978, the average nominal wage 2.7 percent. The rate of increase of retail turnover has slackened after the large purchases in the first half of last year, and reached 100.1 percent.

In the first half of 1979, 37,300 apartments have been built, which represents a lower share of the yearly state plan than in the same period last year.

In the complexity of the fulfillment of all indicators of the state plan, in the more rapid increase of the quality and economy of output and

investment construction, there remain significant possibilities for the overcoming of complicated internal and worsening external conditions of the further growth of the economy.

## I. Development of the Basic Production Branches

### Industry

In the first half of 1979, the total volume of industrial production in centrally planned industry amounted to Kcs 299.3 billion (in 1 January 1977 prices). Its volume rose 2.6 percent in comparison with the same period last year, that is 1.6 points less in relation to the directives of the yearly state plan. The average daily output increased 3.2 percent from the first half of 1978. The calamitous situation in January caused the loss of almost three working days in the fulfillment of the plan. Through extraordinary work efforts of the workers of industrial enterprises, the loss in the fulfillment of the planned volume of output has been gradually lowered from Kcs 6.5 billion in January to Kcs 2 billion at the end of the first half year.

Enterprise plans for gross output were fulfilled in the first half year by 99.3 percent. The greatest lag behind the tasks of the plan is appearing in the general machine tool industry, in the cellulose and paper industry, in glass, woodworking and the building materials industry.

From the viewpoint of a complex overview, according to a set of selected essential structural and qualitative indicators which are decisive, in 1979, for an evaluation of the fulfillment of the plan, it appears, however, that a series of enterprises did not fully come to terms with these tasks in the first half year. The results of plan fulfillment according to the main directions of use of industrial production also attest to this. The volume of deliveries for the use of internal commerce increased by 1.1 percent, deliveries for export by 1.6 percent overall, which represents an increase of 2.3 percent to socialist countries and 0.5 percent to nonsocialist countries. The volume of deliveries of machines and apparatus for investment lessened to 94.8 percent, which is in accordance with plan directives.

The continuity of supplier-consumer relations was interrupted by the unequal fulfillment of a significant number of production tasks, and there was therefore a lack of success in guaranteeing the planned needs of both internal and foreign commerce. An increase in production, in relation to the same period of last year, was achieved in all industrial branches with the exception of the production of heat and electricity.

### Increase of Gross Output According to Planning Groups

Planning Group	First half of 1979 versus First half of 1978 (percent)
Coal Mining	101.6
Production of heat and electricity	98.2
Metallurgy, including ore extraction	102.1
Machine Tool Industry	104.7
Chemicals and Oil Refining	101.3
Rubber and Plastic Materials Processing Industry	103.5
Pulp and Paper Industry	100.2
Building Materials Industry	100.5
Woodworking Industry	102.3
Glass, Ceramic and Procelain Industry	102.5
Textile Industry	102.8
Clothing Industry	103.4
Leatherworking, Footwear and Furrier Industry	102.0
Printing Industry	101.3
Food Industry (Ministry of Agriculture and Food)	101.8

In individual branches, the following results were achieved in the first half of this year:

In the coal industry, 62,156,000 tons of coal and lignite were mined, which is 389,000 tons more than in the first half of 1978. The mining of brown coal and lignite amounted to 47,718,000 tons, the mining of black coal 14,438,000 tons.

The state plan for coal mining was 99.7 percent fulfilled. The plan for the mining of brown coal and lignite remained unfulfilled (99.4 percent), while the plan for the mining of black coal was exceeded by 0.8 percent. The fulfillment of mining tasks for brown coal were unfavorably influenced by low January extraction and a long term lag of stripping projects. The plan for the stripping of earth was only 94.6 percent fulfilled.

The production of electricity reached 33.5 million kilowatt hours in the first half year, that is 1.9 percent less than in the same period last year; this represents a lowering of 6.4 percent in the steam power plants

of the Federal Ministry of Fuel and Energy (FMPE) and an increase in the hydroelectric plants of FMPE of 10.3 percent. In the V1 nuclear power plant, 975 million kilowatt hours of electrical energy were produced in the first half year, which represents a saving of roughly a million tons of brown coal.

The decline in the production of electricity in the steam power plants of FMPE was influenced, in the first months of the year, by a lack of fuel, a high breakdown rate of basic power plant apparatus and a lower consumption of electrical energy in later months. For instance, for the period from March to June, when, essentially, the regulation of electrical consumption was already inoperative, the index of production in FMPE steam power plants amounted to 95.6 percent.

The lower output in the steam power plants, the exceeding of output in the hydroelectric plants and also better results of the start up of the V1 nuclear plant in Jaslovske Bohunice has favorably appeared in an increase of fuel supplies in the warehouses of the power plants: at the end of June, supplies of brown coal reached 2,387,000 tons (index 194.1) and of black coal 869,000 tons (index 154.1).

In the metallurgical industry, total production increased 2.1 percent, which includes a rise in the extraction of ores of 2.4 percent, in the metallurgy of iron of 2.3 percent and in the metallurgy of non-ferrous metals of 1.3 percent. The production of steel amounted to 7.6 million tons, which is 0.3 percent less than in the first half of last year. The production of rolled materials of high quality steels increased by 5.2 percent, the production of thin sheets by 3 percent and the production of steel pipes by 2.5 percent.

Machine tool production increased in the first half year by 4.7 percent, which represents an increase in the heavy machine tools industry of 5.6 percent and in the general machine tool industry of 4.2 percent. The schedule of enterprise plans in gross production was fulfilled better in the heavy machine tool industry (by 100.5 percent), while in the general machine tool industry, which fulfilled the half year plan by 98.5 percent, the process of dealing with losses in production was slower.

A higher growth rate was achieved in the output of development programs: for example, production of apparatus for atomic power plants increased by 121.5 percent, of machines for the surface mining of brown coal by 61.3 percent and in heavy current, semiconductor technology by 16 percent.

In the first half year, increased attention was directed to the production of spare parts for machines for the mining of brown coal. The production of spare parts for digging wheel excavators and loaders grew by 34.6 percent. The volume of production of spare parts also increased for private automobiles (10.8 percent) and for buses (5.5 percent). The product mix of the produced spare parts is, however, still not completely satisfactory.

In the chemical industry, total output increased by 1.5 percent, of which the largest increase was in the rubber and plastics processing industry, 3.5 percent. The production of plastic materials increased 4.9 percent, of polyester staples by 9.7 percent, of automobile gas by 10.3 percent, diesel fuel and heating oil by 3.9 percent.

Production in the building materials industry increased 0.5 percent in the first half of this year in relation to the same period of last year. The production of ceramic wall tiles increased 8.5 percent; that of compressed asbestos cement pipes by 4.5 percent and of hurdis calcined floor slabs by 3.4 percent.

The total volume of production of the consumer industry increased by 2.5 percent. The greatest increase was achieved in the clothing industry, 3.4 percent, and the textile industry, 2.8 percent. The production of furniture increased by 2.6 percent, of knitted clothing by 4.8 percent, of bed linens from textiles by 5.5 percent and of artificial leather shoes by 8 percent.

In the production of the food industry, the total volume of which grew in the first half year by 1.8 percent, the largest increase was noted in the production of oils and fats, 5.5 percent and in meat production, 3.2 percent.

An average of 2,600,000 workers worked in centrally planned industry in the first half of this year, that is, 18,000 more than in the first half of last year.

The productivity of labor (measured by the share of gross output per worker in 1 January 1977 prices) increased by 1.9 percent in the first half year, that is, 1.9 points less than required by the plan. The increase in productivity of labor influenced 73 percent of the increase in industrial productivity.

In the first half of this year, the average monthly wage of a worker in centrally planned industry reached Kcs 2,666 and increased 2.9 percent in relation to the same period last year.

#### Agriculture, Forest and Water Management

This year's weather conditions have significantly increased the difficulty of fulfillment of the plan for agricultural production. After a dry fall and unfavorable winter, which had as a consequence an increased area of ploughed under winter crops, there were significant problems with spring sowing, and the further development of stands of all crops was further unfavorably influenced by extraordinary dryness and warmth in May.

Overall, it was necessary this spring to plough under and replacement seed 9.5 percent of the area of winter grains (10 percent of the area of wheat and 4.2 percent of the area of rye), and in addition 29.5 percent of the area of beets and 12.7 percent of the area of perennial forage crops.



The total ploughed under area amounted to 224,000 hectares and was 122,000 hectares larger than the long term average of 1971 to 1975. This year, the total area sowed with grains reached 2,677,000 hectares (97.3 percent of the plan), legumes were sown on an area of 112,000 hectares (96.1 percent of the plan), potatoes were sown on an area of 216,000 hectares (98.6 percent of the plan) and sugar beets sown on 219,000 hectares (99.5 percent of the planned area). The areas of annual forage crops and legumes has been increased in comparison with the level of the previous year, while on the other hand the areas of grains, potatoes and oil plants were lowered.

In livestock production, the numbers of cattle have increased further in relation to the first half of last year by a total of 1.4 percent, that is to 4,992,000 head. Herds of pigs and poultry have decreased unnoticeably; on 1 July 1979, there were a total of 7,648,000 pigs and roughly 60 million head of poultry in agriculture.

As has been the case in past years, the increase of the number of cattle was on the whole secured in the socialist sector of agriculture; in individual husbandry, a decrease in the herds of domestic animals continued.

In the first half of this year the average daily milk yield reached on the whole 7.97 liters (last year 8.09 liters), the average collection of eggs from one hen 112.9 units (last year 114.3). The production of 2,682 million liters of milk was lower by 40 million liters compared with the first half of 1978, the production of eggs in the amount of 2,399 million was higher by 7 million units.

Conditions led to a worsening of results, in comparison with the same period last year, in the reproduction of the herd. This year, in the socialist sector of agriculture, losses due to death have increased and reached 5 percent of the calves (4.9 percent last year), and 7.4 percent of the piglets (5.9 percent last year). The average daily growth of cattle being fattened amounted to 0.7 kilograms, which marks a worsening compared with the level of the previous year; with pigs being fattened and in preparation for fattening, the average remained at the level of last year, and amounted to 0.5 kilograms.

In spite of these worsened results, the chronological plan in the first half year for the purchase of livestock products was fulfilled, with the exception of milk and slaughter swine, and the achieved level was, except in the case of milk, higher in comparison with the first half of last year.

In forest management, 9.5 million cubic meters of wood have been extracted altogether in the first half of this year, i.e. 51.8 percent of the planned task for the whole year. 8.3 million cubic meters of utility wood have been delivered, which represents 49.2 percent of the yearly plan. The volume of the harvesting of wood and of deliveries of utility wood is roughly



the same as last year. 34,000 hectares have been reforested. In the widespread snow calamity from the end of the first quarter, especially in western and southern Bohemia, the overall calamity reached the level of 7.7 million cubic meters of wood, 2.5 million cubic meters of which has been processed in the framework of the extraction of wood.

The production of potable water in water management increased by 55 million cubic meters, in comparison with the first half of last year, the total production of water reached 725 million cubic meters (last year 670 million cubic meters). At the end of the first half year, altogether 69 percent of the population (last year 67.2 percent) has been supplied with water from public water mains. The share of the population, living in homes connected to public sewage, increased from 55.1 percent in the first half of last year to 56.1 percent.

### Construction

Results achieved in construction were influenced by the unfavorable weather in the first months of the year. Construction enterprises conducted, with their own workers, construction projects for Kcs 38.6 billion, i.e. 2.9 percent more than in the same period last year. The planned volume of work was not successfully fulfilled to its full extent; a loss of Kcs 1.2 billion of the volume of construction projects, in comparison with enterprise plans at the end of February, was successfully lowered, by the end of June, to only Kcs 0.8 billion.

As was the case in industry, selected indicators decisive for the fulfillment of the 1979 plan have not been fulfilled to the planned extent. The structure of construction projects under way has not been completely in accordance with planned directives. The unfulfillment of the plan in the volume of construction projects has manifested itself especially in construction projects for investment construction, and of these particularly in complex apartment construction. A rate of growth higher than that planned was achieved on repairs and other jobs.

The labor productivity of workers of construction enterprises increased in relation to the same period last year by 2.4 percent, compared to the rate of growth established by the state plan for 1979, the rate actually achieved was 2.2 points lower. The increase of labor productivity shared 83 percent in the increase of the volume of construction projects.

In the first half year, the total number of workers of construction enterprises amounted to 5,482,000 individuals, i.e., 2,800 workers more in comparison with the same period last year. The increase in the number of workers was concentrated primarily in the secondary activities of construction enterprises (industrial activity, transport and other service activities). The average monthly wage of workers of construction enterprises reached Kcs 2,802, i.e. Kcs 58 more than the first half of last year.

## Transport and Communications

In the first half of 1979, 297.7 million tons of goods were transported by public freight transport, 137.5 million tons of this by railroad transport and 156.8 million tons by Czechoslovak Automobile Transportation (CSAD).

The loading of goods on the railroad was lower by 1.8 percent in the first half year, in comparison with the same period of 1978. Of the main substrates, the loading of crude oil, tars and products from them was fulfilled; the remaining substrates stayed below the level of the plan. The plan of loading of solid fuels was fulfilled by 97.9 percent (a lack of 902,000 tons).

Impaired operational conditions in railroad transport, called forth by an increased accident rate, technical faults and a high number of obsolete trains, unfavorably influenced the fulfillment of qualitative indicators. In the first half year, in comparison with the same period last year, the circulation time of wagon units lengthened and the average output of a single operational electric and motorized locomotive declined.

The road transport of CSAD moved 156.8 million tons of goods; which is 1.9 million tons less in comparison with the first half of last year, and particularly a consequence of the breakdown frequency of high tonnage vehicles and loading apparatus at decisive workplaces.

In comparison with CSAD transport, a more rapid development of factory transport continued, which is, however, less economical. River transport moved 3.4 million tons. The plan of transport of energetic coal was fulfilled from the beginning of the year by 77 percent.

From January to June, the total number of travellers, transported by public passenger transport reached 1,229.5 million people, which is 18.5 million less in comparison with the same period last year, 7.1 million of these in railroad transport and 11.4 million in the case of CSAD.

The Metro transported 104.8 million passengers in the first half year, and with the introduction into operation of line A, transport increased 1.9 times in relation to the same period last year. The number of telephone stations increased by 60,000; the density of telephone stations reached 20 stations for 100 inhabitants. In the first half year, the Modry Kamen transmitter of the second television program was introduced into operation as well as the Nove Mesto nad Vahom transmitter of the first and second television program.

## II. Investment Construction

From January to June in the national economy, investment work and deliveries (disregarding project Z and the population) were conducted for Kcs 55.7 billion, i.e. 0.2 percent more than in the same period of last year. Construction projects were conducted for Kcs 31.4 billion, i.e. 0.9 percent

less than in the first half of 1978, deliveries of machines and apparatus amounted to Kcs 24.3 billion, i.e. 1.7 percent more.

The rate of increase of the volume of conducted investment projects and deliveries was 2.4 points lower in comparison with the planned dynamic for 1979. The unfulfillment of the plan was evident in construction projects, on the other hand the planned dynamic was exceeded in deliveries of machines and apparatus. The fulfillment of the plan was not the same at all construction projects; according to the category of the construction project, greater fulfillment of the state plan was achieved at construction projects designated as essential tasks and at construction projects with budgeted costs up to Kcs 2 million, including machines and apparatus, not included in the construction project budget. On the other hand, fulfillment was lower at remaining construction projects with over Kcs 2 million in budgeted costs.

In spite of the relatively better fulfillment of volumetric indicators at construction projects designated as essential tasks, the approach to work at these construction projects was not always in accordance with the construction schedule. Several facilities were not successfully introduced into operation within the planned time periods. This is the case, for instance, of the Litvinov Chemical Factories (petrochemistry II), the Prachovice Cement Works, the Martin Heavy Machine Tool Factories (production of Zetor tractor motors), the Povazska Bystrica Povazske Machine Works (energy and water resources).

In the first half year, Kcs 39.6 billion of basic means were obtained through investment construction, i.e. 17.9 percent more than in the same period last year.

For instance, these significant facilities were introduced into operation in the first half year: the Jiri II quarry, first construction project, maintenance of extraction; the Podbrezova Svermova Ironworks, a pipe extruder; Kuncice, central oxygen plant, first construction project; the Tlmace Slovak Energy Machine Works, Hall Iv, separators; Koprivnice Tatra, freight sidings; the Klement Gottwald Iron Works in Vitkovice, reconstruction of the fire brick factory; the super highway from Horice to Humpolec.

### III. Foreign Trade

The stabilizing factor of external economic relations remains the integration of Czechoslovakia into the international socialist division of labor. The exchange of goods with CEMA member countries increased by 6.7 percent in comparison with the first half of 1971, within which exchange with the Soviet Union increased by 13.4 percent.

The rate of growth of exports and imports, both in relation to socialist and nonsocialist countries, has not reached the dynamic required by the plan for this year. It remains, therefore, a first order task for the remaining periods of the year as well, to guarantee an increase of the quality and

technical level of products, to create additional conditions for the increase of the export capability of the Czechoslovak national economy.

Rate of Growth of Foreign Trade Turnover in Percent  
(first half year 1978=100)

Total Exports including:	108.1	Total Imports including:	106.4
to socialist countries	106.2	from socialist countries	107.7
to nonsocialist countries	111.5	from nonsocialist countries	104.4

#### Iv. Standard of Living

Employment increased at a faster rate than required by the state plan in the first half year of 1979. The number of workers in the socialist sector of the national economy (disregarding united agricultural cooperatives) grew, in comparison with the same period last year, by roughly 65,000 people, i.e. by 1 percent (disregarding women on maternity leave). Employment increased the fastest in the branches of education, health, retail trade, sciences and research. State forests and rail transport noted a decline in the number of workers. The number of women on maternity leave remained roughly at the level of last year.

The monetary incomes of the population were Kcs 4.4 billion in the first half of this year, i.e. 2.8 percent higher than in the same period of last year. The rate of growth of the total monetary incomes of the population did not reach the planned level, however their main component, incomes from wages, are displaying a higher dynamic than had been planned, especially with regard to the greater increase in employment. The total monetary incomes from the first half year represented the amount of Kcs 164.1 billion. The average monthly wage of workers in the socialist sector of the national economy (disregarding united agricultural cooperatives) increased 2.7 percent compared to the first half of last year, and amounted to Kcs 2,542.

The relation in the development of labor productivity and the average wages of workers in industry, taken from the yearly state plan, was not achieved in the first half of 1979, due to a lower increase in labor productivity. The planned rate of its increase was not adhered to by 1.9 points, while the increase of average wages was 0.4 points higher than planned. Likewise, in construction the planned relation between the increase of labor productivity and average wages was not adhered to, as a consequence of a lower than planned increase in labor productivity.

The increase in deposits and cash within the population amounted to Kcs 9.5 billion. State savings banks granted loans in the amount of Kcs 4.5 billion, of which loans to young married couples represented Kcs 1.3 billion.

Retail trade turnover in all commercial systems reached Kcs 113.8 billion during the past six months of this year, i.e. 0.1 percent more than in the same period of last year.

The supply of foodstuffs was on the whole even, with the exception of meat, meat products and milk products. In the course of the whole half year, deliveries in the assortment of milk products have been regulated, taking account of the lower milk production. There were similar problems in the assortment of meat products. Supplies of poultry were sufficient and contributed to covering the demand for meat. The supply of vegetables and fruit corresponded to current possibilities in resources and was roughly at last year's level. The situation in the supply of industrial goods was more complicated. The demand of the population was not satisfied for several products, especially for children's clothing, certain types of textile goods, bicycles, portable and color televisions.

In apartment construction, 37,300 apartments were finished from January to June, i.e. 9,000 apartments less than the same period of last year. Of the total number of apartments, 8,300 were built in communal construction, 11,800 in cooperative construction, 4,200 in enterprise construction and 13,000 in individual apartment construction. Construction was begun on 48,200 apartments, i.e. on one thousand apartments less than in the same period last year.

From January to May, 2.3 million Czechoslovak citizens travelled abroad, and in the same period 4.4 million visitors came to the CSSR.

Populational development in the first half year of 1979 moderated in comparison with the same period last year. Live births numbered 142,000, i.e. 2,000 less than in 1978. Mortality remained at roughly the level of the past year. Death claimed 88,000 people. The natural population growth amounted to 54,000.

At the end of June, 1979, the CSSR had 15,239,000 inhabitants.

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CSO: 2400



DEPUTY FINANCE MINISTER GIVES FINAL ACCOUNTING FOR 1978

Prague HOSPODARSKE NOVINY in Slovak 13 Jul 79 pp 1, 4

[Article by Eng Miroslav Zamecnik, first deputy finance minister of the CSSR: "Accounting Which Concerns All of Us"]

[Text] The summary of CSSR state final accounting for 1978, discussed and approved at the end of June by the Federal Assembly, and the comprehensive analysis of every organization's management which preceded it, contain much numerical data concerning economic phenomena which are connected with the development of our national economy. They make it possible not only to appreciate the positive results but also to pause and do some hard thinking about problems and shortcomings.

The method and extent of financing society-wide needs and the needs of every organization in a socialist community depend primarily upon the amount and quality in which financial resources are created in the planned reproduction process. The planned creation of material financial resources in the CSSR for 1978 was exceeded by Kcs 2.5 billion (0.7 percent); in comparison with 1977 these society-wide resources were Kcs 25.3 billion (7.8 percent) higher.

The growth rate of society-wide financial resources, compared with the rate of creating material resources, was therefore slightly faster--according to preliminary data the created national revenue in stable prices increased by 4.1 percent; the societal product by 4.5 percent.

Causes of Differences in Growth of Resources

In comparing growth rates in these macroeconomic quantities the question arises concerning the economic causes for differences in the shown rates.



Compared with the plan and compared with past years the overall rate of increase in creating society-wide financial resources was influenced by a number of contradictory factors. The internal effectiveness of the economy was developing relatively favorably primarily in the area of costs. There was extraordinary variation in the development of deposits and currency which was not anticipated by the plan, an increase which in comparison with the plan and with 1977 amounted to roughly only one-half. The increase in taxes and other budgetary income (by 3.8 percent) was influenced by growth in the retail price index, primarily increased prices of alcoholic beverages, but also by faster growth in more profitable (as far as taxes are concerned) deliveries of goods into the market funds and overall excessive production deliveries to the domestic market. In mutual interconnections it is possible to arrive at the conclusion that the creation of financial resources in this area offset the smaller increase in the people's savings deposits.

Kcs 7,407 per Inhabitant

The created financial resources made it possible to cover the growing needs of the economy and the increase in the people's standard of living.

The most significant component of the needs of economic organizations is represented by investment expenditures which rose by 5.5 percent and maintained a faster rate than the national income. On the other hand, however, their planned volume was unfulfilled by Kcs 2.8 billion (2.1 percent). The nonfulfillment was manifested primarily in the special-purpose constructions of budgetary and contributory organizations and in the building of technical and civic facilities in comprehensive housing constructions. Here the well-known shortcomings continue: uneven fulfillment of the plan in individual construction categories and in individual constructions, nonfulfillment of the plan for completion of facilities, and growth in the original budgetary costs of projects under construction. These and other shortcomings which reflect unpreparedness of project, construction and investors; failure to insure the materials and capacity of some actions; lack of conceptual understanding of investment intents, and the like; are unfavorably reflected in the overall effectiveness of investment construction and are the cause of considerable national economic losses.

In conversion per 1 inhabitant budgetary expenditures for cultural and social facilities increased by Kcs 252, compared with 1977, reaching the amount of Kcs 7,407 which testifies to constantly growing level in satisfying the people's necessities of life in this area.

The growth rates attained and the use of society-wide financial resources insured the overall financial balance of management. But during the past

year also there were a number of structural discordances between supply and demand in domestic and foreign markets and in deliveries between organizations. These structural discordances are the cause of bad management, losses and disorders and they obviously belong among the main contemporary reserves in growth of effectiveness.

#### Enterprise Profits and Costs

The results of endeavors toward financial and budgetary balance are decided primarily in the basic organizational units of the economy--the enterprises. Last year deliveries of state economic organizations amounted to 39.1 percent and the transactions tax to 29.4 percent of the overall revenue of the budgetary system, thus their predominant part. Their amount depends primarily upon creating profits as the decisive financial source and upon insuring its increase by an ever higher share of intensive factors--upon decreasing costs.

Relatively good results were achieved in 1978 in fulfilling the plan to create profits and decrease costs. The set task--to increase profits at a comparable level by Kcs 7.2 billion--was exceeded by 2.3 billion. At the same time the intent of the plan was that in this increase of profits the share of decrease of costs would be 55.4 percent; and the share of growth in performances, 44.6 percent. In reality, the share of decrease of costs in the growth of profits reached almost 59 percent. Indisputably this belongs among the positive aspects of last year's economic development.

The share of overall costs in performances (without the influence of foreign trade) last year was in comparison with the plan also more favorable especially because of decrease in material costs (in percent):

	Plan	Actuality	Difference
Share of overall costs in performances without foreign trade	90.93	90.76	-0.17
From this: material costs	63.78	63.68	-0.10
wage costs	15.83	15.78	-0.05

The improved development of costs last year, however, was not yet sufficient to compensate for nonfulfillment in the first two years of the five-year plan. According to orientationally comparable conversions, costs in the first 3 years of this five-year plan decreased by an average of 0.42 percent annually while the five-year plan reckoned with a decrease of 0.55 percent. Therefore in 1978 costs were relatively higher by Kcs 3.5 billion than costs set up by the Sixth Five-Year Plan.

## Unfavorable Influences

The growth of profits and decrease of costs were unfavorably affected by a number of influences which are partly of an objective character but which testify, however, to a low level of economic and management work.

The distribution of increased profits and decreased costs is considerably differentiated. Last year the share of overall costs in performances increased in 35.8 percent of the enterprises. Even when the plan for the most part anticipated worsening of the results this means that the effect of decreased costs in the other enterprises are used up in this way to a considerable degree.

Last year the costs of coal mining increased by 4 percent in the OKR [Ostrava-Karvina Coal Basin] and also by 4 percent in the SHR [North Bohemian Lignite Basin] mainly because of worsened mining conditions, breakdown of machinery, and other influences.

In housing management, the performances achieved cover the costs by roughly only one-half. The loss in housing management is constantly increasing by an average of 5.8 percent annually; in 1978 it reached the amount of Kcs 4.1 billion (in 1970, Kcs 1.6 billion).

In agriculture during the past years there has been an increase in output and market production on the one hand; on the other hand, however, effectiveness is developing unfavorably. Compared with 1970, the performances of agricultural organizations increased by an average of 5.8 percent annually; costs, by an average of 6.1 percent; and profits, by an average of only 2.9 percent.

Shortages and damages continue to be considerably high. Without compensations received they amounted to Kcs 1.7 billion and fines and penalties paid amounted to another Kcs 2.6 billion, although they dropped in comparison with the preceding year.

Rapid growth in depreciation of principal means (index 107.0) continued which relatively increased the costs. The plan reckoned with this development; it has a partly objective character and increasing workers' equipment by modern production funds is inevitable. On the other hand, however, there is a growing disproportion between the needs of the workers and their sources which is manifesting itself by decreased utilization of new and contemporary production capacities.

Extensive orientation of reproducing the principal means not only intensifies its disharmony with the reproduction of manpower and decreases utilization but also slows down the intensity of this reproduction and hampers growth in the technological level of machinery.

There are many other as yet unused possibilities and reserves of effectiveness in the economy and under the influence of technological progress new ones are constantly arising. Attention must be directed to those which do not require new investments and primarily to improving work organization, work and technological discipline. Also moving to the foreground more and more are requirements for a higher level of planning costs and creating economic results, for a deeper substantiation of the level of planned tasks, for better recognition of and influence upon factors which affect costs.

Therefore we must exert ourselves along the entire management axis to strengthen khozraschet [economic accountability; autonomous financing; the Soviet method of management and accountancy] principles of management and to improve intraenterprise khozraschet. Intraenterprise management should work more effectively toward better utilization of principal funds, more uniform fulfillment of the production plan throughout the month, elimination of idle time, rejects, and other nonproductive costs. A better quality of management on the part of the ministries and the VUZ [Economic Production Unit] must go hand in hand with this.

#### Annual Analyses of Economic Activity

Insuring growth of effectiveness requires increasing the quality of enterprise and above-enterprise management. This cannot be done without qualitative recognition and evaluation of every organization's activity results. This was also the reason which led the government to make significant changes in evaluating the work results of the enterprises and the VUZs.

Principles approved by Decree No 290/1978 of the CSSR government oriented the annual analyses of economic organizations toward the main tendencies and decisive problems of the organizations in fulfilling the plan and toward the adoption of concrete measures aimed at particular organizations. The problems of effectiveness, quality, structure of production and performances came to the foreground directly tied in with personal material incentives of leading economic workers in dependence upon the organization's method of closing operations. Primarily evaluated was the fulfillment of five decisive indicators for the director's annual reward and three of the generally established indicators for creating material stimulation funds which characterize the organization's activity primarily from the viewpoint of satisfying society's needs and the qualitative aspects of management. In cases where all of the mentioned indicators were fulfilled management operations were closed without reservation; when one indicator was unfulfilled, with reservation; two or three unfulfilled, with the introduction of a control regimen; four or more, with the introduction of a special regimen.



The closing of an organization's management activity with a control regimen or special regimen strives primarily for intensified control of the plan's fulfillment this year, the increased effectiveness of measures, and the aid of superior organs for these lagging organizations.

Out of the total number of 3,246 organizations, the management activity of 79 percent of the organizations was approved without reservations; 15 percent with reservation; 5 percent with a control regimen, and 1 percent with a special regimen.

The principles applied for 1978 proved to be effective and it will be possible to leave them without substantial changes for the coming years.

In analysis activity and management work, it will be necessary to continue to increase demands and, in evaluating economic activity of the VJEs and enterprises, to bring to the foreground primarily material results. This requires a comparison of the achieved technological-economic level with the peak level, an evaluation of the achieved level of harmony between supply and demand, starting from the backflow of investments, from competitive ability in foreign markets, the profitability of exports, and other qualitative criteria.

#### Fulfillment of State Budgets

The budgets for 1978, in accordance with the principles of financial policy for the Sixth Five Year Plan, were based upon the concept of actual state-wide balanced budgets, and complete financial insuring of tasks set by the state plan and growth in the people's standard of living.

The fulfillment of state budgets and national committee budgets in 1978 insured these planned intents. Their achievement was conditioned to a greater degree than in preceding years by the growth of internal and external effectiveness and quality of societal production, intensification of economic growth, further intensification of thriftiness in production and nonproduction spheres, and by mobilization of existing reserves. Results achieved in the khozraschet sphere testify to the fact that compared with preceding years the balanced budgets were achieved to a greater degree by intensive growth factors. At the same time, however, there were undesirable savings in expenditures, especially as a consequence of nonfulfillment of the investment buildup plan in the area of the budget sphere.

The state budgets ended with a surplus in the amount of Kcs 0.20 billion. The task of the budget policy was thereby insured in accordance with the law relating to the Sixth Five-Year Plan and the law relating to the state budget for 1978. Achieving a balanced budget required great effort

at all management levels. It was successfully insured in spite of the unfavorable development of prices in foreign markets which increased demands upon financial resources.

Favorable results were also achieved by the national committees. Their income was exceeded by 3.6 percent and expenditures by 1.3 percent. The achieved active difference between income and expenditures in the amount of Kcs 2.2 billion strengthened their reserve and development funds which this year too are the source for implementing the National Front election programs on the basis of developing the citizens' initiative and for solving other tasks of the national committees. The "Z" Action [Community Self-Improvement Program] also significantly contributed last year to the development of cities and communities, to the improvement of services for citizens and the environment. The total value of investments carried out in the "Z" Action reached Kcs 5.2 billion in the CSSR in 1978.

In harmony with budgetary policy for the Sixth Five-Year Plan, insured in 1978 state budgets and national committee budgets, was the further development of social security, education, health care, culture, and housing construction at the following level:

	Actual expenditures in billions of Kcs	Fulfillment of budgets	Index
CSSR, total	112.13	100.3	104.3
Of this			
Social security	61.88	99.3	102.6
of this			
Pensions security	37.79	98.9	102.8
Health insurance	19.80	100.3	102.2
Education	20.38	103.2	106.4
Health care	16.14	101.0	105.2
Culture	3.91	111.4	106.3

By the end of 1978 pensions were paid to 3,700,000 pensioners with the average amount of old age pension paid Kcs 1.106. Because of a lower number of pensioners in comparison with the plan savings were achieved in the area of pension security.



The 15th CPCZ Congress set up the task to place 70 percent of 3-year old and up to 5-year old children in kindergartens by the end of the Sixth Five-Year Plan. This task has already been fulfilled--in the CSR this share achieved 76 percent; in the SSR, 75 percent. In comparison with 1977 the number of children in kindergartens increased by 12.8 percent. In spite of this favorable development there remains a relatively considerable number of unfulfilled applications (108,000) for the admission of children to preschool facilities.

In 1978 expenditures for health care per 1 inhabitant amounted to Kcs 1,198 which is 4 percent more than in 1977. In spite of the fact that the number of hospital beds increased by 3.7 percent in comparison with 1977 the planned intent for 1978 remained unfulfilled by 636 beds. The number of positions for physicians in ambulatory health care increased by 4.6 percent in comparison with 1977, reaching 23,917 positions.

Last year there was a significant increase in the number of spaces in day nurseries, by 4,457 spaces, that is by 5.7 percent for the entire CSSR. Nevertheless the nurseries do not have the capacity to place the required number of children--14 percent of the children up to 3 years of age were placed in day nurseries in 1978.

The high rate of growth in expenditures for culture is connected especially with increased care for maintenance and renovation of cultural relics.

The results of state final accounting and analysis of financial management confirmed the following:

1. The state budget and national committee budgets last year secured the financing of planned economic needs and further development of societal consumption and growth in the standard of living. In this way they contributed to fulfilling the intents of economic and social policy set up by the 15th CPCZ Congress.
2. Economic development taking place under aggravated conditions last year confirmed that not all the national economic links are reacting to these changes fast enough and flexibly enough.

Mainly persisting are some longer-term shortcomings especially in the area of investments, utilization of principal means in structural proportionality of economic development, and in not completely satisfying the needs of foreign and domestic markets. The solution to these problems requires that the effectiveness of management work be constantly increased at all levels, and that unfavorable tendencies be overcome with the full utilization of reserves and possibilities which we have in our economy.

NUCLEAR STATION UNDER CONSTRUCTION AT DUKOVANY

Prague RUDE PRAVO in Czech 25 Jul 79 p 3

[Article by Frantisek Balas, chairman of the CPCZ whole building site committee, Jan Bohac, editor of Rude Pravo and Alfonz Bednaric, editor of Pravda: "Dukovany is Building the First Unit; Another Czechoslovak Nuclear Power Plant is Growing."]

[Text] The increasing consumption of electrical energy and declining classical resources for its production are leading to a search for essential new paths. It appears throughout the world that the sole prospective source is the production of electrical energy on the basis of the fission of atomic nuclei.

Czechoslovakia has also already stepped into the atomic age. At the end of last year, the first unit in our first nuclear power plant, V1 in Jaslovske Bohunice with a capacity of 440 megawatts, was started up. It is expected that just this year it will produce an amount of electrical energy which would require, given the use of classical fuels in a thermal power station, the consumption of about 1.42 million tons of brown coal.

The Future Knocks at the Door

The rate of growth of the consumption of electrical energy will be gradually overtaken in our country by atomic power plants. Before 1980, 880 megawatts will be introduced into production only at Jaslovske Bohunice, then five years later there should be, in both atomic power plants, if we count as having been built the power plant at Dukovany, in the area of Trebic, an additional 2,540 megawatts of installed capacity in operation. In the final year of the Sixth Five Year Plan there should be about 14.5 billion kilowatt hours from these sources, which means about 15 percent of the production of electrical energy. It is correct therefore to designate the Seventh Five Year Plan as the period of atomic energy.

The Dukovany nuclear power plant will contribute to this 1,760 megawatts. Four type V213 light water reactors, each of 440 megawatts and eight

turbosets of 220 megawatts will operate in its two production units. The power plant will be introduced gradually into operation. It will give the first current to the Czechoslovak electrification system in 1983 and the final turbine should begin to turn in 1985. Details, however, will be specified in prepared government decrees, which will establish deadlines and assign the construction project a place corresponding to its significance in our national economy.

#### Extraordinary Conditions

There still remains, however, much to accomplish before the starting up of the first unit in Dukovany. The construction of the power plant, which is being built on the territory of three abolished villages, St. yje, Lipnany and Hermanice, exceeds accustomed norms in its extent and technical difficulty. The total costs of the project, reaching almost Kcs 20 billion, place it amongst the largest investment undertakings of the Seventh Five Year Plan. From the beginning, the construction has been having time delays, caused in the preparation and projection which are the basis of the organization of work, the establishment of construction schedules and the foundation for the conclusion of essential economic agreements on every project, and especially on one so difficult from a construction viewpoint.

At the present time, workers of the general supplier of the construction are managing an extensive building site with an area of two square kilometers. It is Brno Industrial Constructions, one of the nine enterprises of the Industrial Construction Trust. "We are guaranteeing a full half of the construction work at Dukovany", announced the enterprise director of Industrial Constructions, engr Bohumil Koci, Candidate for Doctor of Science. "We are building the main production units of the power plant, the main areals of the building site apparatus and a hotel dormitory in Trebic." The total volume of construction projects reaches almost Kcs 5 billion and represents several tens of structures in ten locations of the extensive building site.

The second half of the construction projects are being secured by suppliers of Industrial Constructions, to whom has been contracted work on individual structures in accordance with their specializations. For instance, Olomouc Transport Construction built the rail line connecting the construction project with the railroad network and is building internal sidings. Brno Ingstav is again doing all water systems, sewage, pumping stations and additional water management systems. Prague Armabeton is building the cooling towers and other enterprises are doing likewise.

#### The Current Situation

From 1974, when construction of the Dukovany nuclear power plant was begun, through the end of last year, extensive construction work has already been accomplished, in the amount of Kcs 500 million. This year the construction

has stepped into the time, in which work has fully evolved on the first main production unit. "In spite of significant difficulties, the most important deadlines of construction have been fulfilled", notes the director for main construction production of the Dukovany plant, comrade Vladimir Kozak. "The huge foundation plates have been set in concrete under the first two reactors, the first few hundred meters of the extensive piping for cooling water has been laid, the "drawing" of the jacket for the first cooling tower is beginning", he is enumerating only the most essential.

This year's plan specifies that the general supplier of construction accomplish construction activity, including that of supply, in the amount of Kcs 358 million, Kcs 135 million of this in the first half of the year. "We stayed seven million in debt to the plan", admits enterprise director eng B. Koci. "In the upcoming, though they be much more complicated, months, we must however come to terms with this slip".

The difficulty of the upcoming period is given in the concrete material goals which it is necessary to achieve this year. To these belong, for instance, the completion of both resultant drainage systems; water lines and distributors of electrical energy necessary for further work, the completion of the primary internal communications, the finishing of construction work on an auxiliary furnace, the completion of the central concrete mixing plant, the reinforcement workshop and timber yard, the completion of the first part of number one cooling tower and the extension of the second to half of its 125 meter height, and a series of other concrete tasks, the fulfilling of which in the established time period will influence the smoothness of work mainly next year.

#### It Will Not Be Easy

It is not only the seven day loss with which the construction workers will have to come to terms in the course of the second half of the year. The concentration of construction and unaccustomed volumes in short realizational periods is bringing additional difficulties. It is apparent that it will be possible to solve them only with an increase in the number of needed workers and the introduction of an uninterrupted approach to the construction projects. This, however, means literally a reversal in the current customs of the work day.

Now about 1,620 workers of Industrial Buildings and their suppliers are working on the construction project. Their number is to increase before the end of the year, in the interest of fulfilling all tasks, to roughly two thousand. Housing and food is being secured in previously constructed facilities. The construction of additional one is continuing. A health center is already functioning, a post office and the construction of a shopping center is being completed. The management of the construction project is attempting to provide the workers with the conditions for good and successful work.

In spite of significant difficulties caused by faltering projection preparation, the construction project is outfitted with the basic facilities. The central concrete plant warehouses and workshops are in operation. Tracks have been laid to the building site from the railway station in Raksice and a long distance water main leads to it as well. The water main has, however, an insufficient source, so water must be brought in.

The elimination of insufficiencies is being worked on diligently. For instance, in October the nearby Dalesicka dam will be used for the water supply.

It is turning out, that just as in the construction of the nuclear power plant in Jaslovske Bohunice, so in Dukovany, conditions lead to certain, even if not fundamental conflicts between individual participants in the construction project. Their roots are in the uneven level of planning and in the direction of suppliers consumer relations. However, neither in the investment process is it possible to leave out the political viewpoint. What is decisive is from what positions the builders of the Dukovany energy basis approach problems. Whether they will subordinate deadlines, the quality of supplies and other planned parameters to narrow enterprise viewpoints or whether they will comprehend the society wide interest given by the economic policy of the party.

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CSO: 2400



LAND RECLAMATION IN EAST SLOVAK LOWLANDS

Prague RUDE PRAVO in Czech 23 Jul 79 p 3

[Article by Zdenek Kopečný, Head of the Department of Forest and Water Management of the Central Committee of the CPCZ, and Jaroslav Michalek, editor of Rude Pravo: "How One Target of the 15th CPCZ Congress Is Being Fulfilled"]

[Text] Although this target is not expressly classified among the chief ones in the Directive for the Economic and Social Development of the CSSR in the Years 1976-1980, it is definitely not insignificant. For the very reason that it applies to a field which has, let us say will have something to say about how one of the most important branches of the national economy, agriculture, will cope with everything that is demanded of it by the 15th party congress. That is precisely why the directive of the congress for the sixth five-year plan among others also calls for "the creation of conditions for increasing the intensity of agricultural production in the East Slovak lowlands, above all by draining waterlogged plots and by the maximum use of the reclamation installations constructed."

This is also precisely why during the past days we sought primarily in the Michalovce and Trebisov districts, thus in the very womb of the East Slovak lowlands, an answer to the question:

What does this entire region need so that it could be what it is supposed to be, that is a region with intensive agricultural production producing a sufficient amount of vegetable as well as animal products?

We received a series of answers. More than one problem, which collides with the achievement of the above goal, was revealed in them. It turned out, however, at the same time that in the lowlands a large amount of work has been performed which has changed this part of the republic, at one time one of the most backward regions, from the very foundation.

## Yesterday

We must remind ourselves at least briefly, that still twenty years ago (the realization of the first stage of the drainage treatment in this region began in 1959) the East Slovak lowlands were the scene of extensive floods each year. And not infrequently even twice a year, the Laborec, Latorice, Uh, Cierna Voda, and Bodrog rivers overflowed, and flooded the region bordered on the west by the Ondava, on the south by the border with Hungary, on the east by the border with the USSR, and on the north the protuberances of the Carpathian Mountains of greater or lesser area. At the same time the water took "its toll not only on the crops, but also on the buildings, on the roads, on the railroad tracks, and not infrequently also on the people themselves.

Unfavorable condition of the water economy was the result of all this. All the riverbeds here in the upper segments had significant slopes, which, however, after the shift to the plain were minimal, and they decreased to as little as 0.0003. Since we include in this the shallow riverbeds and the low bands of the rivers, it is clear that the water in the local streams added considerable work with the overflow with each rise in the level.

On the other hand, however, natural, soil, and climatic conditions created genuine prerequisites for successful agricultural activity and for good lives for the local people, provided, it is true, that the water element could be successfully held. But considering that this required not insignificant resources, the bourgeois authorities for many years only promised the people in the lowlands the required regulation of the water economy. Instead of a good life, the living standard sank here. And it is no wonder, it is difficult to live well, when the fields give an average of a ton of grain per hectare, eight tons of sugar beets, and sometimes not that much. It is difficult to live well when it is not possible anywhere in an area far and wide to find any other source of living or any other work. If one cannot live here, then it is better to go out into the world, many said. Statistically, it was accurately determined that practically every thirteenth citizen left here for work abroad, to the mines of Belgium but even further to the USA or Canada.

Only after liberation on the basis of the Kosice government program, which among other things emphasized the necessity for economic equality of all the regions of the republic, did consideration for raising the living standard also in this one of the most backward regions begin--and not only consideration. Although the government announced approval for the beginning of planning and project preparations for the implementation of a complex water-economic regulation in the East Slovak lowlands only in August 1956, preliminary surveys were made here already a number of years before 1956. Two years later, the government certified a complete study of these regulations in which an investment of two and a half billion KCs was counted upon. Of this approximately 990 million KCs for regulation of the drainage of the area and for protection against floods and more that one and a half billion for reclamation work.

The proper realization of the extensive project--the lowlands were in their time the largest water-economic construction in central Europe--began with a festive excavation not far from the community Izkovce in 1959. The larger part of the regulation of the drainage of the area for the protection against high waters--then the first stage of the entire complex of work--was finished in the years 1965 to 1968.

The results of this work are the key water-economic objects: protective levees and pumping stations with an accompanying canal network 320 kilometers long. There are regulated and controlled riverbeds 210 kilometers long. There is also a water reservoir near Vihorlat known as the Zemlinska Expanse.

But hardly any of the hundreds of thousands of vacationers, who occupy the bands during the summer, are aware that this lake with nearly 350 million cubic meters and a surface of 3,350 hectares was built for essentially prosaic reasons: simply in order to catch the torrential waters from the north side of the Carpathians, to reduce the flood wave of the Laborec, and so to improve its flow for the electric generating plant in Vojane, and so that simultaneously it served as a reservoir of water for irrigation for a plain of 40,000 hectares.

Among the works which resulted from the first stage of work then also belongs the so-called dry polder Besa, an area provided with dikes, its purpose is partly to help particularly with the lowering of heavy flood waves, partly to regulate the flow of water to our neighbors, the Hungarian People's Republic.

The second stage is supposed to solve the liquidation of the wet lands. Until now 60,700 hectares of land have been drained, and subsequently 20,500 hectares have been fertilized.

As regards the third stage of work, when the realization of irrigation as the final intensifying factor for achieving high yields is concerned, a little more than 12,500 hectares of large-area irrigation has been constructed in the lowlands until now.

To the end of 1977, 760 million KCs were invested in the regulation of the drainage of the area, and 896 million KCs, for reclamation work.

Today

Not infrequently the question arises: How do these resources redeem themselves to our society? Or many inquire whether it is providing any return, which is generally considered a return in increased intensity of agriculture production in this region.

As regards the answer to the first question, it is completely unequivocal, and certainly anyone can offer it himself, who visits this region even for a short time. Today the lowlands are the home of a quiet and well-living

people just like any other part of our republic. And it is indisputable that precisely everything which was done here in the past twenty years contributed greatly to this.

But let's stick to the facts.

If we inquire in greater detail into the basic function of the drainage regulation done in the East Slovak lowlands, we come to the conclusion that at present only the first of the three stages of work, the protection against high waters, appears most reliable. The water projects constructed altogether during the past years reliably drained off the high waters and insured the protection of the adjacent territory against floods. This was made evident by a series of clear flood situations in the last fifteen years which would have in the past invariably signified catastrophe for the region. Thanks to the entire complex of works constructed altogether practically always all of the lands which were planned were protected. Also when it is necessary even here still some things are built up; it is possible to say that all the devices for the protection against high waters are fulfilling their function.

Another situation exists, however, when protection against so-called internal waters is concerned. Even here no doubt a great deal was done, but not everything is fulfilling its function as was expected. This especially concerns the drainage of surface waters from agricultural plots in the territory behind levees which lasts too long in the spring. The needs of intensive large-scale agricultural production show that the presence of surface, internal waters on pieces of land from twenty-one to twenty-eight days is unbearable. For example, this year many could sow spring barley only in the second half of May! Out of concern for the adherence to the agrotechnical deadlines of spring work, it is necessary to accelerate the drainage so that the internal waters do not stand on the pieces of land more than six to eight days.

Of the further problems the need to devote attention also to some shortcomings in the reclamation system is essential; let us say about this, that not everywhere does it consistently fulfill its function of realizing detailed drainage. Except for the quite ephemeral exceptions, it is not possible to say that it was the fault of the people who built them. The majority of the inadequate functions of the system is the result of the conditions in which it works. The extraordinarily flat terrain with its insufficient slope not infrequently has on its conscience that the network of canals filled relatively quickly, where the water is supposed to drain from the sod, so that the water not only does not drain but returns instead of draining actually soaks.

Such conditions understandably place a significant demand on the maintenance of the drainage system, and that is above all the care of the agricultural enterprises. Definitely, it is not a good calling card for any cooperative or state farm when it turns out that already practically for several years the drainage system here has not functioned. In spite of this, that in



such a case when it is blocked, the resources expended as a matter of fact are wasted, since then nothing remains other than to construct new drainage. Unfortunately at present, far from all agricultural enterprises in the lowlands do not realize this, and there are always several such enterprises where either they forget completely about the cleaning and maintenance of the drainage system or they devote themselves only insufficiently to it.

And in the meantime how is everything that was built in the lowlands--including irrigation--making itself felt in agricultural production?

After the elapse of 10 to 12 years a clear increase in production was achieved. For example, the yield of wheat increased 100%; corn, 70%; sugar beets, more than 80%; perennial fodder-plants, by almost 50%.

It is, however, necessary to tell the truth, that the increase in agricultural production, which earns every year around 170 to 180 million KCs, has not reached the level which was calculated in the plans.

Even when the cause lies in the fact that the designated goals for the lowlands were contingent on some of the intensified factors introduced clearly making themselves felt, that does not mean that the agricultural workers themselves in this region were already giving the maximum for their achievement. The results especially of such agricultural enterprises as the State Farms Streda on the Bodrog, the Unified Agricultural Cooperative Vysoka on the Uh, Vojcice, Palin, Bracovce, Trhoviste, the State Farm Kralovsky Chlmec, the Unified Agricultural Cooperative Velke Kapusany, Zavadka, Vinne, Bol, Oborin, and others testify to the reserves which lie in this direction; here special care for the best possible utilization of the plots and consistent exploitation of the entire material base shows that here it is possible to manage intensively.

At least one example for all: The Unified Agricultural Cooperative Vojcice in the Trebisov district farms on 2100 hectares of land (all are cultivated). One thousand six hundred hectares of this is reclaimed. And precisely on these lands appears the beneficial contribution of the drainage interventions. Where before reclamation two to two and one half tons of grain were harvested, today four and one half to five tons are harvested. Similar differences were also recorded in the remaining products, chiefly corn and sugar beets. The workers at Vojcice, however, equally reveal that they contributed many various things to the reclaimed lands still for higher yields, primarily in this case so-called subsequent fertilization, chiefly with land-improvement liming, but also with deep digging and a series of further agrotechnical interventions.

And precisely here lies one of the stumbling blocks or causes of the failures in some agricultural enterprises. A number of them namely content themselves with the fact that they have reclaimed lands and somehow forget that this only in itself and automatically does not give the preconditions for high yields. The workers of the Complex Research Agricultural Station in Michalovce developed a series of effective recommendations for successive



fertilizations which in the local ecologically complicated soil conditions is not always a simple matter. It is possible to say that there are altogether verbally and in writing procedures and methods thoroughly verified on the research bases of the stations as well as in the practice of the cooperatives which work with these institutions. It is only a question of the cooperatives and farms using these research results to a greater extent and with greater tenaciousness than heretofore.

#### Tomorrow

The basis on which agriculture in the East Slovak lowlands can further develop as successfully as possible and especially to increase the intensity of its production is undoubtedly the completion of some actions in the protection against high waters as well as in drainage, and also in the construction of irrigation.

It turns out, however, that what must be solved completely in the area of protection against floods is not a simple matter. It does not seem that it would be in any case a particularly great technical problem to raise perhaps the left-bank levee of the Bodrog and part of the levee of the Latorice, which the experience with flood situations of the last few years makes necessary, and neither are the necessary provisions on the Uh in themselves so difficult, even if the solution of this river's situation is not the easiest, that it is impossible to realize them, inasmuch as of course there will be someone to do it. In the meantime, the situation appears thusly: the Bodrog and Hornad Watershed, the enterprise for the control of the rivers, cannot ensure sufficiently even the necessary planned reconstruction of the pumping stations Raskovce, Stretavka, and Streda on the Bodrog, because there is not an enterprise that would willingly perform this work.

The enterprise that was supposed to be the guarantor of the water-economic construction in East Slovakia--Hydrostav Kosice--not only is not fulfilling the obligations on the construction now in progress in this region, but here additionally refused to take over any further future construction. At present, the board of the Bodrog and Hornad Watershed solves the situation at least where the work cannot be delayed; it applies its own capacity earmarked for the maintenance and repair of the constructed installations. This, however, in any case cannot be in any way a long-term solution, and the tasks which here in this direction are essential to perform in order to assure the tomorrow of the lowlands necessitate that a construction enterprise be found for its fulfillment as soon as possible. This also is why already the drainage, but even the building of irrigation, practically depends on the timely ensuring of all of the essential actions in the area of protection against high waters.

And the future of agriculture itself in the lowlands? The answer is imposed, wherever it moves gradually toward a complex solution of all the problems--especially toward a quicker outflow of the spring surface waters--there will not be anything to restrain a quicker increase of production. This would, however, be at least a simplification of the local situation.

It is undeniable that the realization of the extensive program of reclamation interventions, which was accepted in the framework of the sixth five-year plan for the East Slovak lowlands, can be a significant contribution, if there will indeed be liming, digging under, and land-improvement ploughing on all 64,500 hectares, and similarly if the surface perhaps of 32,000 hectares are consistently insured land improvement organic fertilizers and mineral fertilizers, and if the further goals of this program are fulfilled. Meanwhile, however, a rather large question hangs over this, primarily because the necessary technique is missing. The solution of the totality of these problems is essential already too because the contemplated fertilization interventions in any case cannot be done once but must be, on the basis of presently available information, repeated in roughly a four-year cycle.

The most important question, which must however inevitably be solved in conjunction with the necessity for further intensification of the agricultural production in the lowlands, is the question of the system of agricultural management in this region. It appears then among other things that the effort to transform every hectare protected against flooding into a cultivated plot was not always totally present. An example of this might be perhaps the extensive lands belonging to the Unified Agricultural Cooperative Malcice on the left bank of the Ondava where still at the beginning of June there were considerable marshes in which perhaps only frogs prospered. Simply the conditions here do not meet the needs of intensive agricultural production on cultivated lands (for example, the level of the Ondava is even at low stages so high that in some places the fields behind the levees are actually below its level), but it appears that here grasses would prosper.

A similar situation exists also in a series of other agricultural enterprises as in the Michalovce district and in the Trebisov district, and the majority, primarily wherever it was thought that where there was a field which gave perhaps even before draining, two tons of hay a hectare, that after draining there must be a cultivated field--only because, after all, "there was an investment in this, how would that look." In the end it turns out that the cooperative does not have either the two tons of hay per hectare or four tons of winter wheat.

This is exactly why the Conception for the Protection of Fertilized and Exploited Agricultural Lands in the East Slovak Lowlands was developed. This is exactly why at present a project for a system of agricultural management in the lowlands is being intensively developed. In essence, it is a question of the management of the enterprise in the fields that they have at their disposal meeting the potential which these soil conditions furnish. And it is clear, that black cattle must play a significant role in the raising of agricultural production and fertilization of these lands as they do everywhere else. Because the intensity of the breeding in the lowlands is at present rather low (in the Michalovce district there are roughly 60 head for every 100 hectares and in the Trebisov district, 54) and even in this area there awaits the local agricultural enterprises more than enough work.

What was just said cannot entirely exhaust all the problems which the efforts for the development of the intensity and for the most productive agricultural production possible in the East Slovak lowlands will encounter. In any case, however, it answers undoubtedly quite clearly the question: What do the East Slovak lowlands need for their further development? In addition to all these specifics, which were already mentioned, this region needs even now the maximum attention, care, and help in solving all its problems. It needs at the same time, however, even now the most honest approach possible to ensure all of the goals whose fulfillment they have been delegated, and in particular it requires that the agricultural enterprises themselves, the local people themselves do not grow lax in their efforts to further improve their region, so that also in the following years as in the previous two decades, they give the maximum so that the entirety of this region will be a better home for them, a still more generous piece of land. The basic conditions for this are here; it requires only further use of and also support for them. In this case, not even the goal with which many undertook water-economics control 20 years ago, that is to create from the East Slovak lowlands one of the most significant granaries of the republic, will be unattainable.

The following worked on the article: Ivan Bogdanyi, Secretary of the District Committee of the KSS, Trebisov; Engineer Ladislav Lorencik, Candidate for Doctor of Science, Manager of the Complex Agricultural Research Station Michalovce; Engineer Michal Mazur, Manager of the District Health Administration Trebisov; Engineer Jan Tkac, Candidate for the Doctor of Science, Head of the Station of the Research Institute for Irrigation Farms, Somotor; Ladislav Bobik, President of the United Agricultural Cooperative Vojcice, Trebisov district; Engineer Emil Revaj, Deputy Manager of the Branch of the State Amelioration Board in Kosice; Engineer Viliam Gallo, Manager of the Bodrog and Hornad Watershed Enterprise for the Regulation of the Rivers in Kosice.

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CSSR AGRICULTURAL LAND PROTECTION LAW EVALUATED

Prague URDE PRAVO in Czech 2 Aug 79 p 3  
[Article by Marcela Vanorna: "Source of Life"]

[Text] In our country, the per capita share of land suitable for agriculture is 0.46 hectare, while the share of arable land is only 0.33 hectare. This represents one of the lowest averages in Europe and is due to the fact that the CSSR is one of the countries with a high density of population. The demands of citizens for the quantity and quality of food stuffs is steadily increasing. Suitable land area, however, is not growing. On the contrary, with the growth of population and industry, it is constantly being bitten away by bulldozers and giant excavators of mining enterprises, and wide strips of it are being sliced off for new housing projects and highways. Unfortunately, every year we also find a number of cases of agricultural land loss which is more painful because it is unnecessary. Land represents the basic production means, it cannot be bought anywhere, it cannot be manufactured or otherwise obtained. Hence, its protection, careful use, improvement, and increased fertility, are the only ways how to ensure the sustenance of our entire society from our own sources as much as possible.

It would appear that these simple realities are easily understandable to each citizen and that no further elucidation is needed. Nevertheless, we could cite many examples where departmental, enterprise, or local interests dominated over the interests of society as a whole. In these cases, despite dedicated and responsible work of the national committees, there sometimes appeared too lenient approaches and irresponsibly-granted authorizations to remove land from the agricultural land reserve fund, resulting in the loss of tens and hundreds of valuable and irreplaceable hectares.

Suffice a View from an Airplane



During 1966-78, i.e., when the law for the protection of agricultural land reserves (No. 53/1966 Sb) was already in effect, agricultural land was reduced by 209,968 hectares, and arable land by 182,000 hectares. For the CSSR this represents an area equivalent to the agricultural and arable land of three okreses. While during 1971-77 the annual losses in the CSSR of agricultural land averaged 16,695 hectares, last year these losses have grown to 24,446, of which 16,321 hectares were arable land. Simultaneously, there was a growth in recorded changes of a transitory character. How are we to interpret these figures?

Perhaps it would be enough to get in an airplane on a sunny day with good visibility and fly from one end of the republic to the other. It would be difficult to find a town which does not have new housing construction sites in its outskirts. This in most instances would be understandable if such construction projects were being undertaken at the cost of barren or at least poor quality land. For example, in the original expansion plan for the city of Brno, it was envisaged to use through 1990 about 2,600 hectares of high-quality arable land in the southern sector of the city, despite the fact that a less fertile section in the north could have been used instead. The reason? For the planner and investor it was simpler, economically advantageous and technically less demanding. But what about the interest of society as a whole?

The Brno administration should be commended for having eventually found a solution. After complex negotiations, the interested organizations of the South-Moravian kraj were able to relocate the construction project on the distinctly poorer-quality land in the northern sector, thus saving production means of unimaginable value. Indeed, in 1977, for example, the gross yield of agricultural production of a single hectare amounted to 11,746 crowns (expressed in fixed prices of 1966). For illustration, let us multiply the "saved" 2,600 hectares by this figure. A large mound of food worth more than thirty million crowns which we would have lost annually does not even realistically express that which we would have lost along with such a large expanse of fertile soil.

For we also have to take into consideration that year after year it becomes less convenient to obtain food stuffs from foreign markets, while we constantly require larger quantities and demand better choice, as well as better quality. We have become accustomed to the idea that good nourishment on a broad mass scale is in our country an absolutely normal and self-evident fact. If in the documents of the 15th Party Congress set the goal of self-sufficiency in grain production, it acted in full recognition of the unfavorable objective external influences in fact, it anticipated them. One cannot escape from reality. To ensure a sufficiency in quality food stuffs for ourselves and future generations is a primary necessity which our society must face.

It must become our task number one to change the traditional, often indifferent, attitude toward land which exists within all non-agricultural



departments, branches, sectors, and most regrettably, even in many JZDs (Unified Agricultural Cooperative) and state farms themselves. It used to be in former times that people literally went to court for each bit of boundary line between fields. It is a pity that some of us are unable to comprehend that we must be similarly concerned about collective assets and values.

### Fertility of Land is not "Free"

It would be incorrect to permit ourselves to be influenced by various, to us alien, theories which consider shortages of food a limiting factor which will allegedly even curtail people's lives on this planet in the foreseeable future. By correctly investing our efforts and resources in land development, by introducing new biological and technical findings into practical use, it will be possible to increase the hectare yield, as well as the fertility of land many times over. That, of course, is the future.

Currently, however, it is necessary to give careful thought precisely to the words "correct investment of effort and resources." Which is more advantageous as viewed by society as a whole? Fully utilize fertile land which is available or build on it, or otherwise "write it off" and begin instead the laborious process of fertilization of, for example, marshy tracts? This must be carefully considered in each individual case. Each department has different tasks, and opinions of what should be accorded priority consideration may vary. There is nothing unnatural in this. Land protection, however, should become the concern of all without exception. Some might say that the production of food stuffs is of no concern to non-agricultural departments. That may be, but their prices and the subsidies the state must provide in this area, are certainly the concern of all, including each and every citizen. Parochialism in departments which we encounter so often precisely in connection with the protection of agricultural land resources, is the greatest enemy of rational advance in this area.

Those familiar with the specific problems of agricultural production, those who understand nature and the laws of biology, will recognize that in this field of human endeavor one cannot draw conclusions from year to year. Fertile and barren periods alternate and can last even longer than five years. While in 1936 the yield from one hectare was 7,077 crowns, today - as is evident from figures cited above, it reaches values higher by more than a half. This can certainly be considered a success, yet it is only a beginning. It is the balance-sheet of a period which provided the basis for changing the old for the new. Socialist agriculture has a great perspective and will only in the future yield all of its many benefits.

This does not mean that we should not consider this problem thoughtfully and objectively today. We can invest into land development only so much

of our resources as society, mindful of the development of other important programs and areas, has at its disposal. Many an enterprise lacks sufficient manpower even for current production, its exchange coefficient is well below the required level, and yet such an enterprise wants to build a new production hall. If, on top of all this, fertile land disappears under such construction, then this clearly represents ruthless anti-social behavior of the worst type.

#### Can Volunteers Help?

Milk, meat and bread are necessary staples which also require smooth distribution. For any economic system it is difficult to "have to" buy anything on the foreign market at a time when it is not advantageous. It is precisely the constant loss of agricultural land, which we have so far been unable to slow down, that would lead to this. If we want to maintain our high level of production and consumption of food, it is the duty of all citizens, agricultural and non-agricultural workers, every deputy from the national committees all the way to the National Assembly, every institution, industrial, agricultural and social, to expose even more determinedly any breach of the law for the protection of land reserves. This overall effort would profit by a greater involvement of a broad aktiv of voluntary workers from various departments. Much could also be accomplished via auxiliary groupings in the SSM (Socialist Youth Union) and other organizations of the National Front.

There exist many examples where the national committees entrust the protection of land and water assets to one or two workers who, with the best of will, cannot do all the work and are consequently often subjected to criticism. One of the reasons why the organizations responsible for the protection of agricultural land reserves are not always able to handle properly the demands by investors for land allocation for investment and mining projects, is the fact that in the CSR (Czech Socialist Republic), for example, necessary organizational prerequisites for the strengthening of the organs responsible for land protection, especially in the okres national committees, have not been created as required by the CSR government resolutions 133/76, 233/77 and 212/78. Many experts believe that sanctions against users of land who do not fully respect the laws and statutes on the protection of land reserves, should be much tougher.

#### The Conscience of Town and Country

The development plan for the city of Prague, which was initiated prior to the 1976 amendment to the law for the protection of land reserves, must therefore be reworked in many respects, since it originally called for sizeable takeover of specially protected land. The plan included, for example, the production of sand-gravel in the Lahonice area which consists of exceptionally fertile fields such as are rarely found in the CSSR. Other cities are also encroaching on quality fertile land, e.g., Ostrava, Gottwaldov, the Hradec-Pardubice complex, and many others.

In the management of land, however, there are considerable reserves even within the agricultural sector itself. It is not merely the question of agricultural investment construction which, due to strict hygienic, veterinary, fire, water management and other regulations, are usually pushed into the fields outside of the community even despite objections by the agricultural cooperative workers, but the fact that the latter often succumb to pressures from other departments and vacate the arena so-to-say "without a struggle." Yet it is precisely the JZD chairman who is the first to rule on take-over of agricultural land. In the case of temporary take-over, cooperatives and state farms are entitled to the eventual return of arable land and its recultivation at the expense of the enterprises which had used the land temporarily for investment and mining activity.

The aim of a principled approach by the organs for the protection of land reserves, such as the okres national committees and the Czech and Slovak ministries of agriculture, is not to hamper the development of other departments and branches of our national economy - as some might erroneously believe, but to force the investors and planners to seek perhaps more difficult solutions and compromises in which all interests and needs of society as a whole will be respected. Simply stated, it would be paradoxical for agricultural workers to invest, with substantial state assistance, ever-growing means for the cultivation of land in hilly areas which are clearly poorer in energy and less advantageous for tilling than the lowlands, while they are forced to abandon ready-made fertile land precisely in the lowlands.

#### What is behind the Term "Agricultural Land"

Many reserves can be found in the effective use of land primarily by a rapid introduction of tested scientific and technological findings into practical use in a manner which will gradually create a well-thought-out economic system. The resolution of the 13th session of the KSC Central Committee stresses especially a comprehensive approach to the problem. It states: "We must correctly cultivate and use every hectare of agricultural land; fulfill without exception planned tasks in the fertilization of land and effective use of industrial and farm fertilizers; together with the national committees, struggle against losses of agricultural, especially arable, land and prevent its transfer into less productive areas; maintain orderly records of agricultural land."

It is clear that this is not merely a matter of absolute figures of growth and loss of land. The JZD which, instead of adjusting water supply, proposes to transfer a wet field from arable land to the category of meadows and eventually to the passive state of forest land merely because there have sprung up on the tract islands of shrubs, small birches and other wild-seed wooded plants, does not belong among good managers and the okres agricultural administration and national committee should treat it accordingly. Physical inventories are conducted in the agricultural

enterprises, on the basis of which the use of individual categories of land is considered. This is important for the planning and management of agricultural production. It has been shown that systematic inventories are not particularly pleasant for certain enterprises, since they expose long-accumulated and unsolved problems which were not regularly reflected in enterprise records and thus in statistical reviews and charts. In this sense, the inventory process has even caused higher land loss in 1978 which at first glance appears paradoxical, since it was precisely during this year that changes for the better have occurred in relation to land. Very simply, we are putting some order into things and it is gratifying that the number of good examples is growing. Among these is the North-Moravian kraj national committee whose council in 1979 adopted a resolution on follow-up control of the inventory process of agricultural land reserves in those okreses where the losses of land were the highest. The point of this action is to pinpoint and completely resolve shortcomings found. In the kraj national committee in Ostrava, increased attention is also paid to personnel problems.

To the problems of effective use of land also belongs the management of soil in hilly terrain and on scattered, barely-accessible, tracts which modern technology has pushed out of agricultural mass production. The principle is clear: not a single hectare, not a single acre which can be tilled must lie fallow and unused. It is the interest of the state that every bit of fertile land have its cultivator. For this reason, the state supports the work of small breeders and growers and offers them, through appropriate organizations of the National Front, even greater opportunities for creative agricultural work.

The aim of a critical analysis of land reserve management which especially in the past two years has been the deep concern of the ministries of agriculture and food, forestry and water economy, geodesic and cartographic organs, the committee for peoples control, and others, is obviously not to spread pessimistic moods, but rather to demonstrate the crux of the matter, to show where attention must be primarily concentrated, and to seek ways to resolve this complicated economic problem. Here too it applies that constructive criticism and analyses represent the cornerstone of a change for the better. This is vital for a correct approach to land which represents our greatest natural asset.

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PROBLEMS OF AGRICULTURAL MACHINERY MAINTENANCE IN SSR

Bratislava PRAVDA in Slovak 25 Jul 79 p 3

[Based on interview with Eng Pavel Molnar, general manager of the VHJ STS (state tractor stations) and Opravne poľnohospodarských strojov (repair shops of agricultural machinery) and Civil Engineer Jozef Galan, manager of the national enterprise Agrotechnika Zvolen by PRAVDA Deputy Editor Eng Arnost Bak]

[Text] Two parties will come to an agreement easier than five disinterested parties; strict observance of spare parts consumption standards is needed; a single manager should direct reconditioning; the muddy waters of customer-supplier relations breed harmful home-turf mentality; successful experiences acquired in the Soviet Union, the GDR and the Bulgarian Peoples Republic should be emulated.

As in previous years also before this year's harvest much has already been said about the problem of the shortage of spare parts needed to repair farm machinery. And much obviously will be said also before the onset of the fall operations. This rigmarole of charges and countercharges frequently suggests that the problem would be better served if farmers, representatives of repair enterprises and sales organizations responsible for repairs and the supply of spare parts and representatives of industrial enterprises producing spare parts put their reasoning on tape, exchanged the tapes and then played them back in answer every time before seasonal work begins. This is not an irrational proposal but one which would save the administration money because the mutual demands and excuses have become stereotypes for several years now. The truth is that, from the viewpoint of his own sector, everybody is right.

This conviction of ours was reinforced when this newspaper received replies to a letter written by the management of the Seventh Cooperative Agricultural Obvod in the Dunajská Streda okres which we mailed to 10 enterprises and ministries directly responsible for creating conditions which would enable the timely completion of high quality repairs of farm machines. With a single exception the comrades describe their great efforts to arrange



everything to insure that the needed machinery is properly repaired before seasonal work begins but complain about being frustrated in this effort by existing objective causes. Only one letter sought no excuses. It was from the minister of general engineering in which he claimed that our industrial enterprises owed nothing in the production of spare parts. And that the backlog from the calamitous power shortage in the beginning of the year could certainly be made up. That they are not responsible for the shortage of spare parts for imported machines.

We did not want to record these "objective" answers on tape and send them as nonobjective answers to the questions by farmers asking why there was a shortage of spare parts, some even from our own production, except of course those which were always available; and so we arranged a round-table discussion by inviting two comrades who bear the brunt of the complaints by farmers who justifiably criticize shortcomings in the supply of spare parts and the repair of farm machinery, conditions which have now persisted for years. The lively exchange of views between Eng Pavol Molnar, general manager of the VHLJ STS and Repair Shops of Farm Machinery, Jozef Galan, civil engineer and manager of the national enterprise Agrotechnika Zvolen and Eng Arnost Bak, deputy editor-in-chief of PRAVDA went on for several hours.

The discussion, which we are publishing without comments, revealed that when concern is voiced about the production, supply and use of spare parts for farm machinery tutors and guardians are not needed. The fact that neither one of them is materially responsible for the condition of farm machinery made it easy for them to take recourse to the category of "objective" causes.

#### Agricultural Machinery is "In The Middle"

We do not want to side with the national enterprise Agrotechnika Zvolen by any means, but the discussion revealed that this enterprise is, so to speak, between two grindstones. On one hand it is the target of urgent demands from farmers and the VHLJ enterprises STS and OPS, on the other hand the enterprises are hindered not only by various regulations but also by departmental economic interests of the manufacturing industrial colossus GR Zbrojovka Brno for whom the national enterprise Agrotechnika is only a subordinated distribution outlet. In conditions of departmental subordination of a distribution organization to a manufacturing enterprise it is difficult to oppose departmental interests. Especially since the manufacturing enterprise as a superior organ not only decides about bonuses but also has the right to decide which of the requests of farmers for spare parts submitted through the intermediary of Agrotechnika will be included in the production program. This gives rise to many paradoxical situations resulting in a deplorable state of disrepair of farm machinery perpetuated from one year to the next.

Specifically—it would be best for farmers and repair shops if Agrotechnika stocked spare parts for tractors and vehicles all year round and for the repair of machines used only for seasonal work at least three months before the beginning of field work. This could be achieved if Agrotechnika was a distribution supply khozraschot such as a cooperative association of agricultural and repair enterprises. It would then serve only their interests, it could have mobile stores in okreses which would make the stocking of "emergency" supplies of spare parts in individual agricultural enterprises and enterprises belonging to VHL's STS and OPS unnecessary.

But Agrotechnika is a distribution outlet of the GR Zbrojovka and as such it must subordinate its interests to those of the industrial enterprises as many regulations demand. An example is the regulation about limits on spare parts in stock in individual quarters and at the end of the year. Exceeding these limits results in penalties not only by the bank but affects also adversely the payment of bonuses to Agrotechnika employees. Considering the function of Agrotechnika the regulation currently in force requiring to have the lowest inventory of supplies and spare parts at the end of the year is illogical.

But as everybody knows from practice of industrial organizations the production plans of spare parts are being fulfilled least at the beginning of the year while the heat is on production in the fourth quarter and especially the last month of the year. To fulfill the plan and be entitled to bonuses. And so the interests of two components in the same department get into conflict which "cannot" be resolved because of the uneven fulfillment of the production plan during the year. Given this situation Agrotechnika can save itself only in one way—by encouraging its customers to buy what they want and as much as they want. Just to get rid of the supplies in excess of the plan which endanger Agrotechnika's economic interests, frequently even spare parts which are in short supply. And since in our country we have no norms governing the consumption of spare parts as in the USSR, the Bulgarian Peoples Republic and the GDR where it is standard procedure, especially the more affluent agricultural enterprises lay in "emergency" supplies. Consequently the spare parts they have in stock today represent a sum exceeding 1.5 billion crowns. Moreover, many of these spare parts will never be needed and will be turned in years later as scrap. Is this system rational? Definitely not, because it deliberately creates conditions favoring unneeded production in industrial enterprises and an unnecessary expenditure of human labor and machinery, supplies and power to the detriment of farmers and in the end of the entire society.

Or take another problem. Agrotechnika, which from the farmers viewpoint acts as an intermediary, transmits the sum of their spare parts requirements to their producers—to industrial enterprises. But the requirements submitted by Agrotechnika are not decisive, the needs of the producing enterprises are. And this has hitherto also been the arbiter's position. For example, when in response to a request for the production of 1000 pieces of a given spare part or assembly for the next year a production enterprise offers to produce

only 600 "if possible" then the conflict is arbitrated by a mediator who usually will order the producer to deliver a hundred or two hundred pieces more. And the resulting figure becomes the production plan for the enterprise. No wonder then that enterprises subordinated to the Ministry of General Engineering exhibit no shortfalls. And who is the arbiter in the given situation? Who else but the VhJ of which the industrial enterprises as well as the national enterprise Agrotechnika are part. No wonder then that production has no shortfalls and neither has Agrotechnika even though it does not have the required spare parts in stock. This reminds us of a known personality who said he will fulfill everything and then some—but can promise nothing.

But is this a correct planning system? If so, then only to create conditions for the global excess fulfillment of the plan so as to get increased bonus payments.

A single manager should be made responsible for spare parts. Farmers and their management organs attribute the blame for all shortcomings to Agrotechnika employees because they still clearly remember the time when spare parts were in the hands of a single manager. But a certain reorganization has taken place whereby the responsibility for supplying agricultural and machine repair shops with spare parts was parcelled out to various tutors and guardians as if spare parts were orphans. For example, electrical equipment, hydraulic equipment and accumulators are the concern of the national enterprise Mototechna. According to its priority scale governing deliveries farmers are in the seventh place, the last. This is obviously the reason why it has introduced a strange, inexplicable element into customer-supplier relations--the refusal to conclude quarterly delivery agreements and also to make agreements binding. Small wonder then that orders for small electrical assemblies are filled by 30 percent. It is an inexplicable paradox that the national enterprise Agrotechnika has delivered to farmers this year already 11,500 accumulators, in spite of the express interdiction by its VhJ to act initiatively in this sector, when Mototechna offered farmers only 1240 accumulators...

Mototechna, which I presume has neither a central depot nor specialized outlets for supplying farmers, attributes the shortage of spare parts to a lack of production capacities at its enterprises. The offer by the VhJ-STs and OPS made to the VhJ Ceskoslovenske Automobilove Zavody (Czechoslovak Automobile Works) to contribute 250,000 hours of their employees' labor to cooperative work on the production of spare parts which are in short supply and which Mototechna is responsible for has remained without answer for the third year in a row.

The supply of engines was taken out of Agrotechnika's jurisdiction and given to the Czechoslovak Automobile Works, another set of spare parts was parcelled out to the national corporation Technomat, also the national enterprise Rempo received its share. Only Motokov's jurisdiction remained untouched, it

retained responsibility for buying spare parts for imported machines and of course also the problems connected with it. This all is compounded by the inexplicably rising demand for spare parts by farmers and the obvious tendency of foreign suppliers to supply only a minimum of spare parts for the machinery supplied which in turn is aggravated by the limits placed from our side on the purchases of these spare parts. And so in spite of Agrotechnika's requirements the number of zero items in spare parts for imported machinery is growing...

#### Conflict of Departmental Interests

Farmers are frequently heard to complain about the activity of enterprises managed by the VHI-STS and the repair shops of agricultural machinery. People say quite openly that these enterprises, built with public funds and designed to serve agriculture by furthering its development, are failing to fulfill this role. Much depends on the objectives which people attribute to this VHI. When the objective is seen in assistance in the repair of agricultural machinery then the complaints are not so unfounded that anybody could take offense. Because it is a fact that even though the value of repair work carried out increased from 183 to 523 million crowns the increase could have been by 25 percent higher if--there were enough spare parts. But if the activity of the VHI-STS and OPS is judged from the viewpoint of the endeavor to help solve problems in fulfilling tasks connected with increasing mechanization of agricultural production then the VHI-STS and OPS do not deviate from their purpose. On the contrary, in the interest of increasing mechanization of agriculture they initiatively are helping plug up holes which should be the responsibility primarily of enterprises under the jurisdiction of the Ministry of General Engineering by producing spare parts for them. They supply finishing work on agricultural machines worth 150 million and supply work on behalf of the national corporation Zbrojovka worth 130 million. They manufacture spare parts worth 23.5 million for their own use within the framework of their VHI and additional spare parts for cooperating enterprises worth 17 million. In addition, the STS manufacture 36 types of machines and products for use in agriculture amounting to 400 million crowns and they are all sold. In contrast, Agrotechnika has 30 million crowns worth of unsold machinery in stock which, it must be admitted, is also due to certain regulation limits.

The engineering activity pursued by the STS amounts to almost a billion crowns a year and it is difficult to imagine what would happen to mechanization of agriculture without it. But the question can be raised--why STS production serves only the needs of industrial enterprises and not primarily its own. It could but the STS would have to have their own production facilities and become industrial enterprises. This, unfortunately, they are not and so their activity helps them to acquire also certain materials for their own use. It is paradoxical, illogical, in a way demeaning, but true.



The successes they have achieved in the field of repairs are considerable. They could be bigger even without the growing consumption of new spare parts if the problem of reconditioning old, used spare parts were solved. And here again, whether anybody will acknowledge it or not, the cause is false departmental egotism.

Collecting used spare parts from agricultural enterprises is the business of the national enterprise Agrotechnika. As a business and distribution organization for industrial enterprises it is primarily interested in reconditioning those spare parts which production is unable to supply. If also spare parts which are readily available were reconditioned then they would accumulate in stock unsold which, viewed from a departmental perspective, would be highly unpleasant. Last year the VHI enterprises--STS and OPS were able to manage without having to buy 46 million crowns worth of new spare parts by reconditioning old spare parts for 26 million crowns which amount was included in bills to farming enterprises for repair of machinery. This year they intend to recondition almost 30 million crowns worth of spare parts which will obviate the need to buy 50 million crowns worth of new spare parts.

This rising trend is highly desirable from a national perspective but it represents only 4.8 percent of the overall volume of spare parts used while in the Soviet Union a 12.5 percent proportion of reconditioned spare parts is considered optimal and in the Bulgarian Peoples Republic the law stipulates that agricultural enterprises can buy new spare parts only if they turn in used ones. Therefore, the endeavor of the VHI--STS and OPS to build six specialized workshops for mass reconditioning of used spare parts on an industrial scale is highly commendable. This project, because of the benefit which would accrue from it to the national economy, should receive priority in the allocation of the necessary machinery and limits because it could save millions of crowns now spent for new spare parts. But the discussion also brought out the need for a law which would obligate users buying new spare parts to turn in the old ones. Old spare parts should be accepted by those engaged in renovating them because only then can their degree of wear be correctly assessed. If this procedure is considered correct then it follows that he who accepts worn spare parts should also be the one selling new ones. And this cannot be an enterprise interested primarily in the sale of new parts. Therefore, it should be the enterprises VHI--STS and OPS. This is not a new proposal, only a memory from the old good past when the STS were the retail distributors of new spare parts. This issue is not a sentimental return to past practice but the introduction of a developmentally more advanced relationship which could be tried out in two or three okreses. A certain organizational and legal basis for implementing this proposal is contained in the hitherto only partially implemented resolution of the federal government No 104/77 on direct supplier-customer relations of large users such as the enterprises VHI--STS and OPS with manufacturers of spare parts for farm machines. The implementation is only partial because in spite of the promising development of direct relationships--without an intermediary--the national enterprise Agrotechnika pockets a "transport" rebate for simple billing. It is paradoxical, strange but true.



Speaking of these problems we could not avoid comparing our fragmented management of agricultural machinery with the unified management of and responsibility for the technical condition of machinery in agricultural production under a single manager. Experience gained in the Soviet Union, the Bulgarian Peoples Republic and the GDR unequivocally demonstrates that centralized management of and responsibility for agricultural machinery is the only efficient organizational form not only from the viewpoint of the national economy but also from that of the interest of agricultural enterprises.

#### The Solution is in Pooling Forces and Resources

Today it is no secret that individual farming enterprises are no longer in a position to efficiently use or even properly repair the ever more efficient and complicated machinery they use. It is likewise no secret that failure to change the prevailing system means continued waste of tremendous public funds and assets of farming enterprises. Especially after the 13th CPCZ Central Committee Plenum the undesirable condition where the cost of spare parts required almost equals the cost of the machinery must be urgently investigated. Because, for example, the spare parts requirement for imported machinery exceeds 2.5 times the need for spare parts in the country where the machines are made. In the Hungarian Peoples Republic, for example, the spare parts requirement for our tractors is a fifth of the comparable requirement of our farmers. When we submitted our requirements for spare parts for the newest harvesting combines to their Soviet producers they asked us in amazement why we needed so many of them, whether we used them for assembling new machines. It cannot be denied that in our country breakdowns are truly frequent and not accidental either but the result of lack of maintenance and personal responsibility for the technical condition of the machines on the part of management workers.

Based mainly on Soviet experience among the first organizational measures must be the enforcement of standards for the consumption of spare parts supplemented by the investigation of the cause of the premature wear of each part by a commission. And what are the standards to be based on? In the case of foreign machinery on standards valid in the country of origin, for domestic machines on standards set by the manufacturer.

Chairmen and mechanizers from many prominent JZD's, who understood the developmental trend stressed at the 13th CPCZ Central Committee Plenum which postulates industrializing agriculture and intensifying specialization and concentration by cooperation between enterprises and agrarian-industrial integration, acknowledge today the necessity of concentrating the spare parts from farming enterprises in a single okres depot and with regard to repairs to switch to the industrial exchange system. These proposals to pool forces and resources as a prerequisite of more efficient utilization of farm machinery aim at the same objectives as the goals set by comrades from the national enterprise Agrotechnika. If implemented and with the help of a computer a single center could monitor the supply status of spare parts in

all Slovakia by catalogue number and designation, follow their daily movement, plan partial and complete overhaul on the basis of standards, compare spare parts consumption standards with actual consumption, supply producers with specifications for improving the quality or construction of mechanisms or spare parts causing problems. Such a center could also objectively determine the spare parts production requirement or even look for potential alternative sources of supply by bidding. Even in the case of spare parts for imported machinery. All this can come about with the help of computers which we already have but are not making adequate use of. Implementation of this plan, at least to an extent to which it exists in neighbouring socialist countries, calls for concentrating comprehensive responsibility for farm machinery now in the hands of various departmental tutors and guardians in the hands of a single khozraschot manager who will deal directly with industrial enterprises.

Many details were also discussed in the drawn out discussion such as, for example, the necessity of determining the condition of farm machines by specialists after each season which, following documentation, would serve as the basis for preparing binding orders for spare parts, comparing prices of spare parts with prices prevailing in other socialist but also capitalist countries, possibilities of developing international division of labor and mutually advantageous cooperation in repairing basic elements of individual machines through exchange which would make possible industrial organization of repair activity and solve many other problems. Comparing our so carelessly wasteful reality with experiences gained in other socialist countries resulted in the acknowledgement of the necessity to apply their successful experiences also in our country.

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GERMAN DEMOCRATIC REPUBLIC

WEST GERMAN COMMENTARY CITES AILING GDR ECONOMY

Frankfurt/Main FRANKFURTER ALLGEMEINE in German 19 Jul 79 p 9

[Article by Hans Herbert Goetz: "Hardly a Year of Celebration for the GDR"]

[Text] The economic situation in the GDR is more dismal than ever before. The most recent semiannual statistics prove in figures what the eyes can see and what every conversation with GDR citizens brings to light. Those who compiled the information from the government's Central Administration for Statistics for the purposes of propaganda during the 1979 anniversary year went to the utmost effort to disguise the bad situation by omitting figures or purposely changing the reference values. In the manner in which the figures are presented one can learn what partisanship, much described in Communist theory, means in practice for a party official who, 3 months before the thirtieth anniversary of the founding of the GDR, must prove statistically with socialist "objectivity" that everything is optimal.

To begin with, that means that the key statistic, which was always published in the past, namely, the "gross national income," is not mentioned at all. In the 1979 National Economic Plan, the planned goal, which was supposed to be more than 5 percent,—if the five-year plan still has any significance at all for economic policy—had to be decreased to a growth rate of 4.3 percent. This was a big surprise in December 1978. But even this goal was not attained in the first 6 months of 1979. Otherwise, the statistics would have been published confidently. The principle of "hope" is in effect now, whereby a good harvest and a trouble-free second 6 months could help to reduce the backlog. Published was only the fact that industrial production of goods through "daily work" rose 4 percent. Professionals have long figured that the addition of "daily work" to the categories of "bourgeois" and "nonsocialist" objectivity means that the growth in the first 6 months of the year was just over 3 percent. Once before, there was a "number three in front of the decimal point—" in 1976, the year of the drought which damaged

agriculture so severely. It was the weather again in 1979--the severe cold at the beginning of January. At that time, GDR industry, to a large extent, came to a standstill for a few days. As has now been officially confirmed, the damaging effects were large.

If this aggregate figure, the gross national income, which was supposed to increase more than 5 percent every year between 1976 and 1980, demonstrates clearly the production losses the GDR had to sustain, another figure illustrates the effect this disappointing result had on the consumer. One example is retail trade sales. In the first 6 months of 1977, 1978 and 1979, the growth in retail sales quickly declined: 1977--2.5 billion marks, 1978--1.5 billion marks and 1979--only 600 million marks. Scanty references in the semiannual report make it clear nevertheless, that in many, naturally not in all areas, there has been a lack of the "end product" which is so often demanded in all statements from the Politburo.

The fact that the standard of living of the population, which, at the beginning of the Honecker era, improved rather quickly at first, is now increasing at a snail's pace, if at all, is illustrated by another statistic: in 1976, a year-end bonus, the thirteenth month's salary, of 784 marks was paid; in 1977 it increased to 801 marks; in 1978 there was only an additional 10 marks. A similar line of decreasing growth can be seen in the "net income of the population," an important number. It increased (in the first 6 months) 5.6 percent in 1977, 3.5 percent in 1978 and only 3 percent this year.

Naturally there are also pleasing results. In the area of electrotechnics and electronics, production rose exactly 10 percent. Production of semiconductor construction elements rose 23.5 percent, and home refrigerator production increased 30 percent. Individual factories are also praised, but they are almost always the same ones--Carl Zeiss in Jena, the miners in Mansfeld, the machine tool producers in Karl-Marx-Stadt, the petroleum engineers in Schwedt--but such successes are apparently too infrequent. To be sure, further progress has been made in the implementation of the sociopolitical program, but one almost has the impression that altogether, the shortening of the work day and the lengthening of vacations, is "overtaxing" the GDR people's economy.

Agriculture, whose progress was praised so highly this year at the "Agra" in Leipzig-Markkleeberg, also had a difficult time this winter. Cattle had to be slaughtered. The loss is certainly not yet dramatic. The decline in acreage planted in potatoes is indeed linked to the low quality of the seed, now as before. It is revealing that the yield per hectare of potatoes in the GDR reaches prewar levels only in especially favorable years, and this occurs in east Germany, in the soil which is best for

potatoes. The production of "straw pellets," highly praised as cattle feed, decreased this year, certainly because the straw harvest was not successful last summer when there was so much rain.

In the semiannual statistics there are, however, comparatively high rates of increase for exports and for government funds by which prices are held constant--7.5 percent more than in the previous year had to be used for the maintenance of consumer prices and rents, and 12.3 percent more had to be used for the guarantee of lower rents and for the residential construction program. The three statistics which were published with regard to the development of exports (total growth 7 percent, exports to the Soviet Union 9 percent increase, exports to the developing countries 10 percent) make it repeatedly clear that the GDR, as a result of the not sudden but nonetheless always rising prices of energy and raw materials, must export more and more in order to import the same amount.

The SED party leadership certainly must have envisioned the 1979 anniversary year differently. First, the anxiety about the new regulations concerning the Intershops; then the struggle over the restriction of work for journalists; difficult disputes with GDR writers; the Havemann affair; and, last of all, the serious tightening of the penal code--and all that before the backdrop of a decrease in economic power. Certainly, an increase of from 3 to 4 percent--the FRG contents itself with that, and there are truly enough troubles in West Germany. But to claim, as the SED party organ NEUES DEUTSCHLAND did, that "we have made good progress, the statistics and facts attest to the advantages of the socialist planned economy," in view of the facts takes a bit of audacity. GDR citizens, with the exception of the handful of professionals who fuss over statistics and compare results with prognoses and high-sounding "battle programs," take no notice of the "successful statistics." They would be happy if there were finally fresh green beans available on the market.

9241

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REASONS FOR DETERIORATION OF TERMS OF TRADE VIEWED

Budapest MAGYAR NEMZET in Hungarian 25 Jul 79 p 5

[Article by Istvan Vig: "Terms of Trade"]

[Text] In the interest of our social goals, improvement in the efficiency of our economic work, modernization of the production structure, better exploitation of the working time base, thriftiness, better organization of production work, the manufacture of products profitably salable on all markets, as well as the modernization of the production price system are placing a great responsibility on everyone, thus on the ministries, on the upper directive organizations, on leadership and subordinates and on the more than 5 million active wage earners.

The better performance of tasks can be the foundation for the future and the continuing prosperity of the country's 10,700,000 population and the 3 1/2 million Hungarian families.

In our Sunday edition, we published the Council of Ministers' decision regarding the increase in consumer prices and service fees, as well as regarding the supplementation of wages, pensions and other social benefits. We also published the statement of Istvan Huszar, deputy chairman of the Council of Ministers, on the relationships between foreign and domestic price changes. The deputy chairman, who is also the chairman of both the National Planning Office and the State Planning Commission, through his duties is well acquainted with the previously mentioned relationships. From his statement, we quote: "Even in socialist circumstances prices have an important role in economic life and in the systematic shaping of our economic development. Prices must stimulate effective work organization and sensible and economical utilization of the work force, materials and energy. Prices must also fulfill a certain regulatory role in the shaping of individual consumption. There is a need for consumer prices which reflect social expenditures."

The new prices appearing in the Council of Ministers' communique are approaching real values, while the production prices planned for the coming

year are approaching world market prices. The foundations of our people's economy are solid. Our people are working diligently, have faith in the correctness of the decisions and understand that the Council of Ministers made their necessary decision circumspectly.

The portion of the measures containing wage and income supplementation was also met with understanding. Those regularly employed will receive a 180 forint supplement per individual, while members and employees of cooperative farms will receive a 140 forint supplement. Pensioners also will receive 180 forints on their own right. In families with more than one child, the amount of family supplement per child will rise by 130 forints per month.

#### Realignment

If we examine the country's prices, primarily production prices, it is apparent that they have lost their role of motivating or stimulating to more effective work, and have not aided in improving the foreign trade balance. Under the current price system, for example, the state paid out 40 billion forints per year from its budget to provide for products and services for the population. The state, regardless of the effectiveness of their work, reimbursed the investments of economic organizations through prices or through other means. Thus, the properly operating factory, enterprise, industrial and consumer retail cooperative supported the improperly, unprofitably operating economic organization through its budgetary payments.

The majority of consumer prices did not recover the costs, the actual expenditures. It was not possible to make a profit in numerous product groups.

It is common knowledge that consumption increases and merchandise selection broadens with a rise in the standard of living. Along with it, industrial, food industry and agricultural production are modernized. The costs of new equipment and machinery have risen significantly in recent years, both in socialist and non socialist states. While this contributed to the increase in production costs, it did not affect Hungarian prices, because the price differences were largely made up from the state budget. We shall also add that the fees for various services, which have also lagged behind the actual costs to a significant degree, have also had their differences defrayed by the state.

Budgetary price supports have increased also because of world market price increases, and because the terms of trade have been worsening for years. Primarily in the circle of economists, but also among the general public, the expression "price explosion" has become well-known. The extensive world market price changes which occurred in 1973-74 affected especially the prices of petroleum, non-ferrous metals and various energy sources.

As an example, we will mention that the price of petroleum increased four-fold from its 1972 price and is still hovering around that price level. Up to last December, the price of oil from Saudi Arabia rose by 42 percent, while the increase in the other oil producing states was 70 percent. We are mentioning oil as an example because we prepare dozens of chemical articles from this important raw material.

We find it necessary to mention that we are purchasing the predominant portion of the petroleum we consume from the Soviet Union. This year 7.3 million tons of petroleum will arrive from there. We acquire the rest for currency for world market prices. We import Soviet oil at prices determined one year in advance and free from world market speculation.

#### Losses

World market price increases caused losses for us both in imports and exports. In Sunday's price increase article we could read that the price of shoes rose 27 percent, and that the prices of other leather products increased by 20-25 percent since Monday. The world market price of leather increased four-fold in recent years. This year it is already 70 percent higher than it was in 1978. We are mentioning this comparison because the state continues to subsidize the shoe industry. The era of cheap raw material purchasing is over. A new era in world economy, about which Dr. Jozsef Bogner professor has published a book, and which prescribes new conditions for us has begun. The world market is the evaluator of Hungarian merchandise. Unsuitable merchandise is not accepted and shows up as unmoving, unsold supply at home.

Let us examine more closely what the price explosion, the worsening of the terms of trade mean for our people's economy. Wheat and corn, for example, are important export items for us. Indicative of the price proportion change is that fact that in 1972, before the price explosion, we received 4 tons of oil for one ton of wheat. Today, we can only buy one ton of oil for one ton of wheat. The terms of trade for corn have also resulted in losses for us. In 1972 we could buy 3.5 tons of phosphate, the basic material for artificial phosphorus fertilizer, for one ton of corn. Last year, we could only buy 2 tons of phosphate for one ton of corn. Price increases relegate the task to everyone, manufacturer and consumer alike, of being more thrifty with every gram of imported material, whether it be a chemical product or energy source.

#### Clear Vision

Our economic organizations must endeavor to improve the terms of trade for their products. Price losses would be considerably less if more modern products, which could be easily and profitably sold on all world markets would issue from our factories.

Istvan Huszar, deputy chairman of the Council of Ministers, in connection with the modernization and changing of production and consumer prices, in his Sunday statement emphasized: "It is impossible to postpone the establishment of production and consumer prices which better express the actual costs. Only in this way can the producer and consumer realistically judge the magnitude of the expenditures, and determine what is economical to produce and what is sensible to consume."

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PROBLEMS OF IMPROVING FUEL-ENERGY MANAGEMENT ANALYZED

Warsaw NOWE DROGI Polish No 7, Jul 79 pp 34-42

[Article by Lechoslaw Gruszczynski: "Problems of Streamlining Fuel and Power Management"]

[Text] The problem of keeping an even fuel and power balance has currently become a major factor affecting the pace of the nation's socioeconomic development. It produced a particularly striking impact during the fall-winter 1978/1979 demand peak.

But this is not a problem specific to Poland alone. Fuel and power problems arise in many countries, both those endowed with energy resources and those that must import them.

The differentiation of the fuel and power balance depends on the one hand on the quantity of fuel obtained from a country's own resources and from imports as well as on the capacity of the plants processing primary fuels into derivative fuels and energy (electric power plants, coking plants, refineries, heat generating plants, etc.), and on the other, on the extent of energy consumption by the national economy and by the rate of its growth as well as on the pace of introduction of efficient technologies, equipment, and designs assuring a more thrifty exploitation of the available fuel resources. It should be added that, the increase in technical and technological progress in the economy, the development of large-scale agricultural production and the improvement in the living standards of the population are accompanied by an increase in the ratio of the consumption of the fuel and energy derivatives obtained from primary fuels to the direct consumption of primary fuels in unprocessed state.

The high capital requirement and time-consuming nature of the expansion of the fuel resources and fuel-processing facilities restrict the possibilities for their development. Hence, the problem of streamlining fuel and power management is a problem of fundamental importance.

A unique paradox exists in our economy. We experience shortages of fuel and power but at the same time our fuel and power consumption is excessively high. This is demonstrated by the still high energy consumption per national income in our country, higher than in many developed countries.



To be sure, during 1970-1974 the energy consumption per national income as measured in the amount of primary energy consumed per million zlotys of national income decreased by an average of 5 to 6 percent annually (from 151 tons of standard fuel per million zlotys in 1970 to 121 tons in 1974), but this kind of improvement cannot be considered satisfactory. The more so as the rate of decrease in the energy requirement of national income has in recent years come to a virtual standstill.

This was due to, among other factors, the opening in recent years of new energy-consuming plants, the marked expansion of housing and industrial construction based on the use of much poorer insulating materials, and the expansion of large-scale crop and livestock farms requiring substantial quantities of fuel and power.

But we also are dealing with many instances of waste of fuel and power. The machinery and equipment operating in our plants still consume too much power. When the problem is generally considered, the introduction of energy-saving technologies, machinery, equipment, installations, and facilities should be accelerated. To this end it is necessary to undertake and intensify broad measures both of a stopgap and a long-range nature, requiring appropriate preparations such as the conduct of the necessary research, tests and measurements, the development of designs and the assurance of implementation, deliveries of machinery, equipment, etc., and--in more than one case--substantial investment outlays.

The importance of the problem of streamlining fuel and power management is emphasized not only by the dismaying experience of the fall-winter 1978/1979 peak period but also by the still continuing fuel and power problems. Restrictions on the consumption of power and electric energy by users had to be maintained following that peak period as well. This has been caused by, among other things, the insufficient increase in new capacity and the excessive outages at electric power plants. Owing to the limitation of the output of electric power on the basis of brown coal, an extra burden was placed on the power plants burning black coal. In its turn, the inadequate quality of that coal caused a rise in its unit consumption and hence also a worsening of transport problems.

The resulting situation was such that, owing to transport problems, deliveries of black coal became irregular despite the marked increase in its extraction. This was a major cause of the decrease in the users' inventories of that fuel. In more than one instance this has resulted in a major threat to the continuity of operation at the plants, as well as in many difficulties in supplying the population with coal and electric power.

The limited production capacities of the coking plants and the limited possibilities for obtaining gaseous and liquid fuels from domestic deposits and from imports cause considerable difficulties in balancing the demand with supply for these scarce fuels as well. In such a situation various

steps have been taken to lessen the resulting tensions. It was necessary to impose drastic limits on the consumption of all kinds of fuels and electric power and energy. Plans for restricting the consumption of electric power and gaseous fuels were applied on introducing a flexible system of information on the level of the restrictions as well as rotation of the plants to which the restrictions are to apply.

In every voivodship special plenipotentiaries for fuel and energy savings were appointed to the rank of deputy voivodes. In addition, voivodship and plant socioeconomic commissions charged with, among other things, supervising the implementation of resolutions and directives issued concerning fuel and power management as well as of the pertinent programs have been established.

Inspection activities have been intensified. In the recent period inspections of fuel and power management were carried out in about 20,000 economic units. The inspections conducted by the office of GIGE (Main Inspector of Energy Management) show that in many economic units the problems of fuel and power management still are not considered equal in importance to other economic and production problems so far as the fulfillment of targets is considered, although the influence of restricted deliveries of fuel and power on the production-economic effects has become obvious. The fines imposed for exceeding the limits on fuel and power consumption reached several billion zlotys in 1978.

In the opinion of GIGE the problems of streamlining fuel and power management are generally speaking better understood in the larger plants, though not everywhere. The experience of last winter has caused more attention to be paid to the problems of efficient fuel and power management in this country. But we still encounter quite a few instances of failure to observe the principles and regulations for efficient energy management. The situation is particularly disturbing in many small production plants as well as in stores and service establishments, etc., where often no proper measures are taken at all to improve fuel and power management and frequent instances of glaring waste take place.

There is a lack of proper supervision of fuel and power management by many superior units. The directives concerning that management sometimes take several months to filter down to subordinate units, and in many cases are implemented only formally.

The staffing and qualifications of energy services at many economic units are inadequate. Inspection by GIGE revealed that energy services exist in only about 50 percent of industrial plants, and that the situation outside industry is even worse. We also find that the staffing and role of energy services in superior units have decreased, which has undoubtedly been a factor in the relaxation of the supervision of subordinate units as regards fuel and power management.

The present fuel and power situation requires the full mobilization of all socioeconomic activists at every rung of the management hierarchy with the object of exploring the potential for saving fuel and power. To this end, early this year a program has been drafted that resulted in the expansion and intensification of activities to streamline fuel and power management.

During 1979 comprehensive inspections of fuel and power management will be conducted in seven energy-consuming industries: the cement, steel, refractories, inorganic, petrochemical, construction machinery, and synthetic fibers industries. In addition, problem inspections will be conducted with regard to 14 particularly important sectors of fuel and power management.

A currently important task is the updating of fuel and energy saving programs at plants. We also expect that the currently ongoing review of fuel and power management in every economic unit will produce measurable effects. This entails particularly important tasks for the workers' self-government conferences, socioeconomic commissions, and voivodship plenipotentiaries for fuel and power savings. This concerns not only the supervision needed in this respect but also inspiration, effective assistance and the provision of favorable conditions for exchange of experience.

The streamlining of fuel and power management depends to a great extent on many so-called long-range measures which I already mentioned. I will return to this problem later. But it is also perfectly clear that often a great deal can be accomplished to improve that management by means of simple measures not requiring costly outlays and yet producing rapid and substantial effect. The aforementioned inspections by GIG show this to be totally true.

It is important that this should be borne in mind when updating the fuel and power saving plans at plants. At many plants considerable savings of fuel and power can be achieved by, for example, streamlining the existing organization of production. Great quantities of fuel and power are wasted by inefficient utilization of machinery and equipment, by their stoppages in between shifts, by incomplete utilization of the capacity of heating furnaces, by undercapacity operation of facilities, and also by failure to observe the technological regimes, the prescribed periods of grinding, heating, etc. At many industrial plants water-treatment facilities are improperly operated and often measuring and control instruments are improperly maintained, heating systems are poorly regulated, etc. In many installations heat escapes through open doors and broken windows, in winter, too, owing to the poor functioning of ventilating and air conditioning equipment, leaky pipes, etc. Another major source of losses is the common habit of lighting and heating entire factory floors instead of only the working posts and equipment servicing sites, as well as the habit of ventilating entire factory buildings

instead of using local exhaust ventilation or insulating the equipment and isolating the premises for waste-releasing equipment, etc.

Considerable potential for reducing fuel and power losses exist in the housing sector (drafty floors and windows, failure to extinguish unnecessary lights, inactive automatic lighting devices, improper regulation of central heating facilities, hot water leaks, etc.).

A distinctive yardstick for the development of initiative to save fuel and power will be the two-level (at the voivodship and central levels) Contest for Saving Fuel and Power. Its scope will be—we expect—much broader than previous undertakings of this kind.

We attach considerable attention to the currently ongoing evaluation of the fulfillment of the program for an effective utilization of fuel and power during 1976-1980, which contains specific tasks for the individual ministries. In addition, some 2,000 modernization projects will be specially evaluated during the current year. It is indisputable that the effect of modernization on streamlining fuel and power management can and should be much greater than it has been so far. This is a major premise of the program of modernization activities being currently drafted for the next five-year-plan period.

A cardinal factor in the level of energy consumption by the economy in the immediate future is the modernity and energy-saving nature of design solutions as well as the quality of implementation, which affect the level of the consumption of fuel and power throughout the entire, long operating period of facilities, equipment, machinery, housing, etc.

On the average each year some 6,000 project-design documents are examined by GICE; this includes about 80 complex investment projects. It is estimated that the revisions made in project designs during 1978 from the standpoint of fuel and power consumption will produce savings of about 800,000 tons of standard fuel and about 2.8 billion zlotys of investment outlays.

Considering savings are produced, as is known, by the introduction of central heating systems and the combined generation of heat and electric power, this is the standpoint from which the program for the development of heat generating systems by the Ministry of Power and Atomic Energy will be revised.

In this country the fuel and power balance is based on the domestic resources of brown and black coal and on the imports of hydrocarbon fuels, i.e., gas and crude oil. The structure of that balance is marked by the predominant share of black coal, which greatly affects the level of energy consumption. This is because the use of coal as fuel entails technical and design restrictions on increasing the effectiveness of its utilization in view of the limited possibilities for a smooth regulation of combustion



and technological processes, the difficulties in introducing automatic control, etc. At the same time, modern industrial technologies, particularly those used in such energy-consuming industries as metallurgy, chemical industry, or the building materials industry, require using hydrocarbon fuels, which are not only readily amenable to automatic control but facilitate obtaining higher temperatures, intensifying production, etc.

The structure of the fuel and power balance also greatly affects the level of the efficiency of fuel utilization in the housing-communal sector in town and country, as well as in agriculture and transport. This is because the efficiency of the heating facilities used for purposes of agricultural production, as well as the efficiency of steam locomotives, in which coal is used as the fuel, is markedly lower than the efficiency of facilities heated with hydrocarbon fuels. Thus, the very structure of the fuel and power balance influences the level of energy consumption by our economy.

Another cause of the high level of energy consumption per national income in this country is the large share of energy-consuming branches of industry (mining, metallurgy of ferrous and nonferrous metals, heavy machinery, nitrogenous fertilizers, cement industry, etc.). Energy consumption decreases as energy management improves in these industries and also in measure with changes in structure of output. Here it should be emphasized that, despite the marked rise in the technological level of our industry, we still have quite a few old plants with obsolete technologies and facilities, as demonstrated by the broad variation in the levels of energy consumption in the manufacturing of the same products at different plants.

The level and structure of fuel and power consumption in agriculture and in the housing-communal sector are unsatisfactory owing to, among other things, the excessively large share of solid fuels used in unprocessed form and the low level of the electrification and mechanization of private households and farms. It is also worth noting that the overall consumption of energy by the construction industry is increasing owing to, among other things, the development of industrialized construction techniques (offsite housing factories) and the mechanization of operations.

Energy consumption in socialized transport is markedly decreasing, both in comparison prices and in current prices, but the consumption of electric power by that branch of the economy is decreasing at a rather moderate rate. This is due to the introduction of dieselization and electrification as well as to the retirement of inefficient steam locomotives; in this connection, despite the development of railroad electrification, the systematic reduction of electricity consumption is noteworthy. This is accomplished by introducing technical progress and streamlining the consumption of fuel and energy. Although these measures are carried out on a limited scale, they result in marked improvements of fuel and power management.



The consumption of energy and electricity by agriculture, especially by socialized agriculture, displays a rising trend, owing to the increasingly broader introduction of industrial methods of large-scale crop and animal production. The structural changes occurring in agriculture require using many new energy-consuming facilities, mechanization, etc.

In the housing-communal sector the indexes of fuel and power consumption in general as well as of electricity consumption per capita are steadily rising. This is associated with the implementation of the housing construction program and the raising of the standards for housing amenities. It should be emphasized, however, that, compared with many other European countries, the index of electricity consumption per capita is still low in this country.

At the same time, a great deal of fuel and energy is wasted in that sector owing to the low efficiency of heating facilities and the substantial losses of heat during the heating season due to the poor insulation of buildings. The loss of heat in new construction is nearly twice as high as in the traditional buildings erected in the 1950s.

Hence, aside from the emergency measures to streamline fuel and power consumption in every unit of the socialized economy, which can markedly contribute to assuage the current difficulties, it is necessary to implement long-range measures intended to reduce the energy consumption of our economy.

The extremely broad scope of the problems relating to the streamlining of fuel and power management, their relationship to the development of the national economy, and the external conditions causing these problems, require a comprehensive and integral treatment and comprehensive analyses of all these complex problems. Work in this field has been undertaken by a governmental team drafting the program for the development of fuel and power management until 1985 as well as the trends of that development until the year 2000, and also within the framework of the governmental research program being drafted in this field. Many experts from various domains are working on this program.

The structural changes desirable from the standpoint of streamlining fuel and power management take time and are practically impossible to accomplish within one or two five-year periods. This is a process requiring systematic continuation and expansion of the related activities. In practice, this is a continuous process, since technological progress creates ever new opportunities for more efficient and streamlined management. In this country, given the lack of real opportunities for altering the structure of the fuel and power balance within a short period of time, the dominant role of coal will result in an added restriction of the possibilities for a radical improvement in the efficiency of utilization of fuel and power.

This makes all the more necessary the intensification of efforts and activities to streamline a broadly conceived fuel and power management. This requires taking steps decisive to, first, the elimination of fuel and power losses and second, the reduction in the direct consumption of fuel and power, by, among other things, using energy-saving equipment and eliminating energy-consuming technologies.

Thus these tasks must apply both to direct fuel and power users and to designers, project programmers, constructors, and equipment makers. This also necessitates the coordination of measures from the standpoint of assuring the correct development of discrete energy systems and mutual coordination and complementation of various kinds of energy sources, also in view of the lengthy investment-project cycles in the fuel and power industry.

All these activities of a long-range nature require appropriate lead time, both in applied research and design work and in the preparation of the production of the necessary machinery, equipment, facilities, etc., as well as in the implementation of investment projects.

At the same time, it is necessary to improve the current economic-financial system and organizational solutions in order to provide conditions favorable to stimulating interest in the streamlined and thrifty consumption of fuel and power.

The consistent implementation of comprehensive programs should result in a fundamental reduction in the energy consumption of our economy. In industry this should cause the introduction of far-reaching changes in production technologies, the use of new and more efficient equipment, and the broader introduction of modern and energy-saving techniques such as transistorization, automation, computerization, etc. In construction it is necessary to revise the current solutions and technologies from the standpoint of markedly improving the insulation of, in particular, structural partitions, as well as to introduce efficient control systems for heating networks. A major task is the further elimination of the direct consumption of primary fuels by the population and the development of centralized heat sources along with an increase in the degree of combined generation of heat and electricity in electric and heat generating plants with the object of streamlining fuel consumption. In transport the reduction in energy consumption will be achieved through the electrification and dieselization of the railroads as well as by improvements in the load-capacity structure of the truck transport fleet and through the dieselization of that fleet along with the modernization of the designs of combustion engines and improvements in public transport. Another important task is the development of waterway transport. In agriculture the changes in the structure of consumption of fuel and power will consist in the elimination of direct consumption of primary fuels and its replacement with the consumption of electrical energy, heat energy, etc. In this connection, allowance should be made for the changes ensuing from the establishment of the crop and livestock industry as well as of large-scale agricultural factories.

Along with these long-term measures it is necessary to broadly expand the modernization of fuel and power management at the existing facilities. Under the present conditions, given the current tensions in the fuel and power balance, modernization is a priority task since it most rapidly produces an effect in the form of a reduction in fuel and power consumption. It is at the same time the cheapest method of redressing the fuel and power balance. The construction cost per megawatt of electric power in new power plants is about 10-12 million zlotys or, after the cost of transmission, conversion, etc., is taken into account, about 20 million zlotys. The investment outlays on increasing extraction in coal mines also show a rising trend, owing to the need to extract at greater depths as well as owing to the attendant more difficult geological conditions. By contrast, the implementation of modernization projects serving to reduce the consumption of fuel, electricity, or other kinds of power, and hence to increase their utilization for other needs, requires only a tiny fraction of these expenditures. Thus, the modernization measures undertaken as part of the program developed by GICE for an efficient utilization of fuel and power during 1976-1980, result in reducing the consumption of fuel and power to the extent of 1 million tons of standard fuel annually, with the expenditures amounting to as little as several or several score zlotys per ton of standard fuel, and rarely exceeding 1,000 zlotys per ton. The expansion of the scope of modernization measures and the assignment of the necessary priority to these measures would make it possible within a short period of time to achieve fuel and power savings on the scale of 2 to 3 million tons of standard fuel annually at the cost of relatively small investment outlay. Unfortunately, measures to modernize fuel and power management still are regarded by enterprises as a secondary task, and they expend funds instead chiefly on those modernization measures that result in the expansion of production capacity.

In the current energy situation it thus becomes necessary to intensify efforts to broaden the scale of measures to modernize fuel and power management. Not all of these efforts require investment outlays or deliveries of machinery and equipment or implementation by specialists. Many of them can be exerted within the framework of repair work.

A prerequisite for steady progress in streamlining fuel and power management is the development of applied research work. This requires also the coordination of such work as well as the tightening of current collaboration with project-design offices and maintenance services to rapidly apply research findings to economic practice and to draw from that practice the inspiration for further research.

The assurance of development of the production of the necessary equipment, machinery, instruments and receivers is indispensable to the modernization and streamlining of fuel and power management.

The roster of urgent needs in this field is long. They concern many domains of production, both that needed for the development and more

efficient functioning of power industry (for example, as regards the development and modernization of the production of boilers, transformers, power cable, etc.) and that in other industries, which face the task of developing the production of energy-saving machinery, equipment, apparatus, and receivers (for example, motors, ovens, light sources, television sets, thyristor circuits, household appliances, etc.).

Steps will be taken to introduce automatic control of acoustic frequencies as well as of the supply of heat in heating systems, and to broaden the scope of application of thyristor circuits in electric drives, since these circuits produce considerable savings in electricity and heat consumption. Work to improve the efficiency and reduce the power consumption of household appliances will be continued.

It is necessary to consistently improve and raise the skills of operating personnel, particularly in the energy services, which should inspire measures to streamline fuel and power management. In this connection, it is necessary to adapt the programs for regular and advanced training of energy services at every level to the needs of industrial energetics with its complex energy and technological problems. At the same time, lectures on the principles for streamlining fuel and power management should be introduced in other areas of technical education.

The integral and comprehensive program for streamlining fuel and power management already is partially being implemented and partially still exists in the stage of revision and refinement. The pertinacity and consistency with which this program will be enforced are largely decisive to the successful economic development of this country.

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## ENERGY POLICY STRESSES MORE EFFICIENT USE OF RESOURCES

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[Article by Vasile M. Popescu, doctor of economics: "Urgent Importance of Power Engineering"]

[Text] The direct dependence of social progress upon consumption of energy in the most varied forms, from primary energy to electric power, is more apparent than ever today. It can be seen that henceforth the effectiveness of a national economy will depend more and more upon its energy potential and especially upon the efficiency with which it is used, and our party is emphasizing Romania's energy problems for that reason. At the Conference with Managers in Industry, Construction, Transportation and Agriculture of 5-6 March 1979 Nicolae Ceausescu once again pointed out the need of greater efforts on the part of all workers to minimize consumption of fuel and energy as one of the very serious problems of our economic development.

Conserving energy is becoming increasingly important in our national policy for organizing and reorganizing our economy and industry. It is also warranted by certain unfavorable circumstances, such as the very limited reserves of crude oil and gases, the growing economic and technical difficulties of exploiting the reserves of crude oil, natural gases and even of coal, meaning greater investments and extraction costs, the increasing annual imports of crude oil, coke and coking coal at high prices, etc. Alongside other factors, conservation of fuel and energy is becoming an important consideration in determining the strategies for organizing production. As the party secretary general pointed out at the above-mentioned conference, "In view of the international economic situation and the effects of the energy and raw materials crisis, it will be a major aim of the next five-year plan to radically improve the structure of our industry and to emphasize investments in development of the branches and sectors consuming less energy." This amounts to a reconsideration of the national energy policy and orientation of the whole economy toward strictly rational consumption of energy and fuel.



## Evolutions and Correlations

In the last 25-30 years Romania has made sustained efforts to recoup the lag in its economy and to provide its people with the highest possible living standard. In the energy field, big hydroelectric and thermal electric power stations were constructed, with resulting increases in both the production and consumption of primary energy and electric power. Nearly 65 billion kilowatt hours of electric power were produced in 1978, or over 57 times more than in 1938 and over 30 times more than in 1950. The provisions of the current five-year plan call for an output of 75-80 billion kilowatt hours in 1980.

Comparative analysis of production and consumption of electric power at high economic indices brings out some important points. The statistics show that the total electric power output in 1977 was 7.8 times greater than it was in 1960 and had an annual average growth rate of 12.8 percent, which was higher than the growth rate of the national income (9.8 percent) and that of the industrial output (12.7 percent). The total consumption of electric power showed a higher growth rate than that of the total power output (13.1 percent in 1960-1977). This was due to the efforts to equip our whole economy with electric power, to create a modern industry with priority development of metallurgy, chemistry and the building materials industry (all characterized by heavy consumption of primary energy), and to raise the people's living standard. Romania's per capita consumption of electric power was only 60 percent of the world average in 1950 but equaled it in 1961 and exceeded it by 72 percent in 1974.

If we limit the period under consideration (1960-1977) to 1971-1977, we see some qualitative changes in the way of a sharp decline of the growth rates of production and consumption of electric power. The electric power output was 1.7 times greater (with an annual average growth rate of nearly 8 percent) in 1977 than in 1970, while consumption of electric power was 1.9 times greater (with an annual average growth rate of 9.6 percent). Note that although the growth rate of electric power consumption exceeded that of the power output, both rates throughout the whole national economy were below the average annual growth rates of the national income (10.8 percent) and the industrial output (12.7 percent). In 1971-1977 transportation and telecommunications and especially agriculture also showed higher growth rates of power consumption than those of production in the respective branches.

Decline of the average annual growth rates of power production and consumption is pronounced in this five-year plan and in the future. It is due to the party's measures and programs to make better use of energy, to expedite modernization of the economic structure, and to develop the sectors with lower specific consumption of energy. The ultimate aim of the basic strategy for conserving energy is a more pronounced reduction of the growth rate of energy consumption in relation to overall economic growth. The production conditions in our economy indicate that increased total consumption of energy is accompanied by a steady decline in specific consumption of electric power.

The fact is that all sectors of the economy still have great potentials for rational use of energy, and they are the more apparent when compared with the situation in the industrially developed countries. This is illustrated by the figures

in Table 1 on the specific consumption of primary energy per 1,000 French francs of industrial output in the main sectors of industry in Romania compared with those in Sweden and France.

Table 1. Consumption of Primary Energy per 1,000 French Francs of Industrial Output (in kg of conventional fuel)

ȚARA 1)	Anul 2)	4) Consumul de energie primară*					
		Total Industria 3)	5) din care în ramurile:				
			6) Metalurgia fierului și neferoasă (inclusiv extractivă)	7) Industria construcțiilor de mașini	8) Industria chimică	9) Industria alimentară	10) Industria textilă, a confecțiilor și pieișriei
România 11)	1955	215	446	60	537	82	46
	1977	191	350	60	645	64	37
Franța 12)	1975	89	322	42	163	37	46
Suedia 13)	1975	122	383	36	126	48	49

\* În calcul s-a utilizat relația: 1 franc francez = 1 coroană suedeză = 2,6 lei.

- |   |   |
|---|---|
| 1. Country  | 7. Machine building industry              |
| 2. Year   | 8. Chemical industry                      |
| 3. Total for industry                                       | 9. Food industry                          |
| 4. Consumption of primary energy*                           | 10. Textile, garment and leather industry |
| 5. Above in the sectors:                                    | 11. Romania                               |
| 6. Ferrous and nonferrous metallurgy (including extractive) | 12. France                                |
|   | 13. Sweden                                |
- \*Computed at the ratio of 1 French franc = 1 Swedish crown = 2,6 lei.

Table 1 shows that in 1977 Romania used 1.6 times more conventional fuel than Sweden and 2.1 times more than France throughout its whole industry to obtain the same output value. Our chemical industry alone consumed 4 times more than that of France and 5 times more than that of Sweden.

To extend the analysis to the whole national economy, energy consumption per \$1,000 of national income is about 3,000 kgcc [kg of conventional fuel] in Romania, 1,930 kgcc in Czechoslovakia, 1,260 kgcc in Sweden, 1,230 kgcc in Italy, and 1,200 kgcc in the FRG. Of course these indices are characteristic of each economy and reflect the distinctive features of the economic structure, climate, way of life etc., so that there can be no standard models.

Reducing specific consumption of energy and constantly raising the growth rate of the national income higher above that of energy consumption are still very urgent problems of great importance to our national economy. In pointing out that Romania expends much more conventional fuel than the industrially developed states to obtain 1 unit of national income, Nicolae Ceausescu said in his speech at the First Congress of Workers Councils in July 1977 that "This situation must

be abated as soon as possible by taking steps to reduce the industrial inputs of electric power and the losses of it in the transportation and distribution systems, to make the fullest use of secondary energy resources, and to eliminate any forms of energy waste. We must make every effort to conserve resources as far as possible and to secure the necessary base for intensive development of our economy."

#### What Energy Resources Are We Using?

One of the characteristic features of our party's economic strategy is its constant effort to keep developing the domestic base of raw materials and energy resources and to restrict imports to strictly necessary ones. To meet the needs of our national economic development, the 1976-1980 Five-Year Plan as well as the General Guidelines for Drafting the 1981-1985 Five-Year Plan call for heavier investments in geologic prospecting and discovery of new sources of raw materials and energy, and for development of adequate methods for exploiting all possible resources to the best economic effect.

In the case of petroleum and the natural gases, prospecting and geologic exploration are primarily for purposes of expanded depth drilling, further drilling operations on the continental platform of the Black Sea, greater productivity of oil wells, and recovery of reserve deposits by perfected extraction methods. In the case of coal, the emphasis is upon discovery of new deposits and more detailed knowledge of the conditions for working the deposits of soft coal and lignite in Valea Jiului and Oltenia. As a result of these efforts, 75 percent of the requirement for energy resources will be covered by domestic resources in 1980.

Meanwhile measures are being taken to improve the structure of the primary energy reserve and to modernize the structure of electric power production by emphasizing predominant use of the inexhaustible and inferior energy resources and by promoting new energy sources that can be regenerated. Thanks to this policy structural changes have been made in the electric power reserve as indicated by Table 2.

As we see, the proportion of hydrocarbons (natural gases, fuel oil and motor oil) in the primary resources used to produce electric power dropped from 75.1 percent in 1965 to 56.1 percent in 1977. Meanwhile the proportion of coals, especially lignite, and of hydroelectric power increased accordingly.

Despite this progress it is evident that the structure of the primary energy reserve according to energy bearers is still unsatisfactory. In view of the effects of the technical-scientific revolution and of the energy crisis with which the modern world is confronted, as well as the conditions in Romania, the General Guidelines for Drafting the 1981-1985 Five-Year Plan approved by the National Party Conference of 1977 indicate a number of major objectives for the further structural improvement of the primary energy reserve, such as more intensive use of the reserves of soft coal, lignite and bituminous shales; accelerated growth of the electric power output through water power resources; reduction of the proportion of crude oil and natural gases in order to use them in the petrochemical industry, where as we know a much greater effectiveness is obtained; and greater

efforts to exploit new energy sources, such as energy from nuclear fission, solar energy, wind power, geothermal energy, energy from tides and waves, bioconversion etc.

Table 2. Energy Production Structure According to Type of Fuel Used (in %)

1) Ani	2) Cărbuni		Păcuri și motorină 5)	Gaze naturale 6)	Energie hidroelectrice 7)	Alte resurse 8)
	3) Total	4) din care: lignit				
1958	24,4	—	62,5	—	13,1	—
1960	21,2	9,2	12,4	60,3	5,2	0,9
1965	18,5	6,8	5,2	69,9	5,8	0,6
1970	27,9	15,8	3,0	58,5	7,9	2,7
1975	27,8	16,3	4,2	49,6	16,2	2,2
1977	25,8	15,0	10,0	46,1	15,6	2,5
1980*	44,0	—	4,6	32,0	14,0	5,4

\* Prevădori.

\*Planned.

- |                     |                           |
|---------------------|---------------------------|
| 1. Years            | 5. Fuel oil and motor oil |
| 2. Coals            | 6. Natural gases          |
| 3. Total            | 7. Hydroelectric power    |
| 4. Lignite in above | 8. Other resources        |

#### Conservation from Extraction to Consumption

According to many studies made by world famous institutions, no great increase in the proportion of new energy sources in the energy reserve is to be expected by 1990-2000, nor any spectacular new techniques that will be much more productive than the present ones. Under these circumstances one of the best ways to solve the energy problem is to conserve it throughout the whole chain from extraction to ultimate consumption.

At the Conference with Managers in Industry, Construction, Transportation and Agriculture, the party secretary general pointed out that all ministries, centrals and enterprises must take decisive action to reduce fuel and energy consumption throughout the whole economy. Of course such a vital objective requires a new method of analyzing the resources and inputs of primary energy to determine the best ways and means of using them, and the energy balance has proved to be an effective instrument for the purpose. It is compiled from primary extraction to ultimate consumption, and each stage is characterized by an energy yield of its own. It enables us to analyze the structure of our domestic and imported energy resources and to determine the energy losses and the energy used in every machine, installation, production section and enterprise, and finally in the whole national economy. We can also determine the overall net output,



which reflects the quality of the industrial equipment in each sector and the effect of the national economic structure upon the energy inputs on the macro-economic level. The energy balance also enables us to discover the unused secondary energy resources and to select the best ways of using them, the most efficient energy bearers, and the best systems of heat and electric power supply. This provides a real basis for determining the best technical and organizational measures for more productive use of energy in whole installations and in their component parts.

Comparative analysis of the energy balance in Romania with similar ones compiled in industrially developed countries leads to some conclusions of theoretical and practical importance. For example in 1977 Romanian industry accounted for 61.8 percent of the total consumption of energy resources, while in the industrially developed countries the proportion varied between 26.5 percent (Netherlands), 31.6 percent (FRG), 32.7 percent (England), 39.3 percent (Sweden), 40.2 percent (Italy), 40.6 percent (France) and 47.4 percent (Japan). This situation is determined especially by the nature of the production structure and the industrial methods used, and it should be added that in Romania the specific consumption of energy in the manufacture of some products is much greater than in other countries, indicating real possibilities for conserving energy.

One effective way of conserving energy is to cut the losses in the industrial cycles of its production, transportation, distribution and consumption. Out of the total energy losses throughout the national economy, industry accounts for about 59 percent, the electric power production sector 20.5 percent, the household sector together with other consumers (in agriculture and the services field) 12.5 percent, transportation 6.1 percent etc. For a more complete picture of the extent of these losses, it is helpful to compare the effectiveness of our use of energy with that of other countries. For instance the overall net productivity recorded in Romania in 1976 was 39 percent, which was below that reached by the United States back in 1970 (47.5 percent). In other words Romania lost about 61 percent of the energy it consumed. If we include the energy resources still in the ground in the operable reserves, no more than 15 percent of the energy is ordinarily used, and the remaining 85 percent is lost.

Increasing the productivity of equipment, installations and processes is a major means of cutting energy losses. Of course their quality and technical level are all-important in this respect. As it was pointed out at the above-mentioned conference, it is necessary for this purpose to conduct a broad and intensive campaign to perfect and modernize the installations, equipment and processes and to replace the ones that are less productive and require high energy inputs.

It is primarily important to operate industrial equipment as productively as possible. Good results are obtained by supplementing the existing equipment with highly productive burners, devices for regulating combustion and the systems for recovery and recirculation of the thermal agents, and installations for recovering the residual heat in combustion gases, by perfecting the installations, by automating the operating controls, especially by introducing process computers, etc. Experience shows that specific consumption can be reduced by 15-20 percent in all furnaces, large or small, by automating the combustion adjustment and the intake of air and fuel.



Major savings in energy resources have been made by reducing the internal inputs of power stations and the losses in transmission networks (electric power distribution). Internal consumption dropped to 6.7 percent in 1977, and to less than 6 percent in 1978. It is planned to reduce this consumption to 5 percent at most in the near future, and it can be done by taking a series of measures to rationalize the operation of the installations, by raising the voltages of some power transmission networks, by introducing plates with minor losses in the structure of transformers, by using transformers with optimal rated capacities, etc.

In view of the preponderant share of industry, construction, transportation and agriculture in the general consumption of Romania's electric power, it goes without saying that very extensive and effective efforts must be made in all these sectors.

Some first considerations are widespread promotion of technical progress, improvement and modernization of industrial processes and various equipment, replacement of energy-consuming units and processes, recycling of agents bearing residual energy, further recovery of secondary energy resources, elimination of idling of machines and installations and loading them to their rated capacities, reorganization of production flows, expansion of local lighting of equipment, complete elimination from construction of materials obtained from petroleum and gases and use of traditional materials that have proved efficient.

In case of a very close energy balance, it is highly important to reexamine the list of products and to restrict or replace the energy-intensive products so that consumption or export of energy via such products can be avoided as far as possible. To this end the party administration has decided that the next five-year plan will provide a radical structural improvement in the industrial output, with emphasis upon efforts to develop the sectors consuming less energy and upon better use of material and manpower resources.

The series of programs to conserve fuels and energy include recovery and complete exploitation of secondary energy resources. Thanks to the measures ordered in Decree No 620 of 1973, secondary resources amounting to 9.7 million tons of conventional fuel were inventoried and 78.5 percent of them were exploited in 1976, and in 1977, out of a total volume of inventoried secondary energy resources amounting to about 10.9 million tons of conventional fuel, nearly 74 percent were exploited. The studies that have been made indicate that secondary energy resources in excess of 11.5 million tons of conventional fuel will be exploited by the end of 1980, resources chiefly derived from blast furnace gases, from coke, semicoke, refinery and liquefied gases, from the heat of combustion gases, from the sensible heat of hot products and wastes, etc.

Note that a number of secondary energy resources are still unexploited, especially those with a lower energy level or those for which all technical possibilities of recovery have not been studied and determined. These include bituminous shales, useful elements in dumps and cesspools of the mining industry, blast furnace slag, ashes from thermal electric power stations, the gases and heat of gases of various fuels, vapors, the heat of residual waters and even the heat of products in various stages of the production process in the metallurgical and chemical industries, the building materials industry etc. It is both

technically and economically effective to develop closed-circuit processes based on the circular working method of complete exploitation of all substances and energies in the raw material and of the by-products resulting from the production process (and not of one substance alone).

#### Some Methodological Aspects

Some methods of measuring the economic effectiveness of our use of energy resources must be reconsidered in the light of the requirements for their conservation and better use. This conclusion is based upon several considerations.

In the first place, the present system of recording production costs as well as the customary calculations of the economic effectiveness of production, investments, foreign trade etc. take account of the outlays, in units of value or volume of energy resources, only in the last stage of production. They are called direct or stage inputs. The indirect inputs of energy resources in the previous stages and in the related production of other sectors and enterprises are not entered separately in the production costs but under the general heading "raw materials and materials." Consequently in the final stage of production it is no longer known what quantities of a given energy resource have been incorporated in a given end product, especially in the case of products manufactured by a production network or system with a great many geographically scattered stages. This can lead to errors in substantiating decisions for various organizational units. The problem is how to determine not only the quantity of energy resources required for the final stage of production but also that for the intermediate stages, beginning with the original source, or how to determine the total or cumulative volume (direct plus indirect) of energy resources consumed or incorporated by the end products, in order to find the key points where steps can be taken to cut down on the resources.

By calculating the direct and the cumulative inputs of energy resources for various products of our industry, I am calling special attention to the very great differences between the two categories of inputs. Thus the proportion of the cumulative input of energy resources to the final (direct) input for a product varies between 1.1 and 16 in the machine building industry, between 1.1 and 23.9 in ferrous metallurgy, between 1.2 and 75.9 in nonferrous metallurgy, and between 1 and 2.1 in the wood, furniture and building materials industries. These proportions show that unless the cumulative input of energy resources is taken as a basic criterion of the energy consumption of the sectors and products, it is impossible to correctly determine, on the level of the national economy, the actual investment from the standpoint of the requirement of energy resources demanded by the production increase planned for any of the categories of the final input, and especially that of exports.

In the second place, the present internal system of prices does not adequately reflect the total volume of energy resources consumed or incorporated in the end products. For instance the delivery prices of the intermediate products of metallurgy (metallurgical coke, medium white pig iron, killed Martin steel) show increases from one stage to another that are less than those in the cumulative energy input, while the delivery prices of the products of the machine building

industry considerably exceed the increases in the cumulative energy input for the respective products. Therefore if the prices are to be an effective means of accomplishing the tasks for better use of energy resources, the cumulative energy input must also be considered in setting them.

And finally, the shortcomings of the present method of calculating the profitability of exports can be corrected by allowing for the cumulative energy input in analyzing profitability. When the price of an export on the international market is compared with the price of the energy on the same market, significant results are obtained as to the profitability of the export. In other words, it is determined whether or not the full value of the energy resources directly or indirectly incorporated in given products is recovered by exporting them.

As a most urgent yet very long-range problem, conservation of energy in every way as well as better use of energy resources are the object of our entire people's efforts. Any new progress in this direction affords greater opportunities for rapid development of the national economy, for progress and the general welfare.

5186

CSO: 2700

## INVESTMENTS IN FIXED ASSETS, JANUARY-MAY 1979

Belgrade PRIVREDNI PREGLED in Serbo-Croatian 4, 5 Jul 79 p 4

[Article by R. Vuksanovic: Increases Greater Than Planned]

[Text] Payments for investments in basic resources were in May 32 percent greater than they were in May of last year. If one were to eliminate the influence of the price increases in building materials and services in construction and the trades, the real volume of paid situations and bills is greater by approximately 20 percent. According to these data, similar trends continued in June as well, which means that the tendency toward a growth which was faster than that planned has remained unchanged until the end of the first half of the year.

According to those involved, the May Investments from the resources of the organizations of associated labor in areas outside the economy and those from independent interest associations have increased considerably more than those from other sources. This is partly a consequence of the previous earmarking of income in favor of the noneconomic sector. Even though the tendency toward such earmarking of income is slower this year than it was last year, it has still not been completely removed and this is reflected in the investment activity.

## The Volume . . .

In the January-May period the total investments from the social sector nominally grew by 32 percent, while the real increase has been 18 percent. However, in view of the fact that a part of the payments, particularly in the first quarter, pertained to work done in 1978, it may be concluded that the physical volume of investments in the first half of the year increased by approximately 15 percent. When comparing this to the forecasts, it can be concluded that the realized rate of the growth of investments in basic resources in the first half of the year has been approximately twice as large as that planned, since the economic policy measures for 1979 planned an investment growth of approximately 7 percent.

According to sources, the fastest growth during this first half year has been from the resources of the organizations of associated labor outside the economy and independent interest associations and from banking resources, while the slowest growth was evidenced by the organizations of associated labor in the economy. The slowing down of the growth rate of investments from the economic resources indicates that its investment potential has decreased this year as well. This can be partly explained by the fact that in this period the organizations of associated labor have paid considerably more attention to the financial transactions connected with business needs rather than those dealing with the realization of investment programs.

(1) INVESTICIJE U OSNOVNA SREDSTVA (2) (u milionima dinara)

	V 1979. I-V 1979.		V 1979. I-V 1979.	
	V 1979.	I-V 1979.	V 1979.	I-V 1979.
Investicije ukupno (3)	7.087	117.238	133	132
Organizacija udruženog rada u privredi (4)	9.164	40.752	130	124
Organizacija udruženog rada van privrede (5)	2.719	10.134	154	141
Samostalne interesne zajednice (6)	1.041	4.547	133	161
Bankarska sredstva (7)	12.514	55.302	134	139
Plasmani preko banaka (8)	1.180	4.419	109	92
Tržišno-političke zajednice (9)	469	2.084	122	134
U tome: (10)				
Opštine (11)	253	958	146	142
Republike i pokrajine (12)	150	857	94	135
Federacija (13)	66	269	125	108

Key:

1. Investments in basic resources
2. in millions of dinars
3. total investments
4. Organizations of associated labor in the economy
5. Organizations of associated labor outside the economy
6. Independent interest associations
7. Banking resources
8. Placements through the banks
9. Sociopolitical associations
10. breakdown
11. Opština
12. Republics and provinces
13. the Federation

The half-year rate of growth of investments from the resources of the socio-political associations corresponds to the average rate of investments in the basic resources. However, within the framework of these resources, as can be seen from the table, the greatest increase was realized from the opština resources, and the least from those of the federation.



### ...And Structure of the Investments

The economic structure of the investments indicates that in the first half year there was a faster growth in the economic rather than noneconomic resources, so that the participation of investments in economic projects increased by one point, while that of investments in noneconomic projects decreased correspondingly.

The realized trends also had an influence on a change in the structure according to participants, because there was a further decrease in the participation in the total investments in the social sector by the organizations of associated labor in the economy, while there was an increase in the investments by the other organizations and independent interest associations. It is characteristic that within the framework of banking resources, there was an accelerated increase in investments in housing construction, so that the participation of resources intended for this purpose increased.

In the republics and provinces, the payments for investments in basic resources were greater in these 5 months than they were in the corresponding period last year--in Bosnia and Hercegovina by 20 percent, in Montenegro by 2 percent, in Croatia by 12 percent, in Macedonia by 53 percent, in Slovenia by 48 percent and in Serbia by 34 percent. Within Serbia, in the area outside the provinces a growth of 40 percent was realized, in Kosovo 30 percent and in Vojvodina 26 percent. The slowdown of investments in Montenegro is a consequence of the earthquakes which have struck this area.

9110

CSO: 2800

## SYSTEM, STRUCTURES OF TAXATION OUTLINED

Belgrade EKONOMSKA POLITIKA in Serbo-Croatian 18 Jun 79 pp 20-22

[Text] For some time now the system of taxation has been discussed without any results. The aim is to achieve uniformity in all types of taxes, modes, and bases of taxation in all republics and provinces. One of the motives for this is to equalize the position of all organizations of associated labor [OURS] in the unified Yugoslav market. Without underestimating the significance of this aspect of taxation policy, it is necessary to establish that previous debates have failed to include an analysis of the socioeconomic content of the existing taxation mechanism.

If one overlooks the differences in the taxation apparatus of individual republics and provinces, one can say that the Yugoslav system of taxation contains very few economic and social criteria. This could also be claimed with respect to the system of contributions for financing self-managing communities of interest in the social activities. After all, there are no essential differences between taxes and the majority of contributions for SIZs [Self-Managing Communities of Interest]. Contributions are paid from the incomes of basic organizations and workers' personal incomes--i.e. from the same sources and in the same fashion (by regulating the rates) as the payment of direct taxes by basic organizations of associated labor. The very fact that the receipts of individual communities of interest appear to be independent and technically allocated out of the budgets of sociopolitical communities, does not alter their essentially budgetary character.

## Economic Criteria

Taxes should provide sufficient resources to meet commonly accepted general needs which are financed by means of budgets. This, however, is not the only task of the system of taxation. Namely, the system of taxation must also meet definite economic criteria. Under Yugoslav conditions this would primarily involve the stimulation of OURs to allocate greater resources from their net income for expanding and improving the material bases of work, i.e. for maximizing accumulation. In addition, the system of taxation should contribute to the realization of an appropriate structure of economic development

in accordance with goals defined by social plans and programs of development. In practice, this could mean more lenient taxation of the income (net income or personal incomes, depending upon the established tax base) of OURs in those activities whose more rapid economic development has been established as a goal of socioeconomic development policy.

The system of taxation can also contribute to the realization of more adequate regional development. This could be achieved by more lenient taxation of the tax base, i.e. by exempting a portion of income invested in regions whose more rapid development is of common interest. This can also be achieved by more lenient taxation of OURs located in those areas.

The system of taxation can contribute to more stable economic movements as well. The system of direct taxation which itself presupposes the application of progressive taxation, contributes automatically to the stabilization of economic flows.

If one poses the question as to which one of these criteria does the Yugoslav taxation apparatus meet, one must conclude that it does not fully meet any one of them. The entire taxation mechanism contains no instrument which stimulates OURs to greater allocations for extended reproduction. Since taxation is predominantly linear and proportional, a conclusion can be drawn that the system of taxes and contributions does not contribute to the direction of regional development either. The case is the same with respect to the influence of the system of taxation on the stability of economic flows. A partial exception to this is the stimulation of regional development, i.e. the more rapid development of less developed republics and provinces, and less developed communes within republics and provinces. The solutions here, however, are also partial, as proven by the achieved results.

#### Social Requirements

One of the basic requirements for every system of taxation is that the tax burden be proportionate to the financial strength of the taxpayer. This principle is also contained in the Constitution of the SFRY. In practice it means that OURs and individuals who have greater income at their disposal make proportionally larger contributions for meeting general (and common) needs. The application of this principle represents progressive taxation.

Progressive taxation of OURs has not been introduced in any of the republics and provinces. Both income and workers' personal incomes are taxed proportionally. Progressive taxation is used only in taxing the incomes of independent activities, and the total income of citizens. It should be noted, however, that in the case of taxing the total income of citizens, this type of tax becomes practically meaningless. This occurs both as a result of the increase in the nontaxable portion of receipts, as well as the system of distribution of personal incomes which is based mainly on maintaining the differentials in the amount of individual personal incomes resulting from occupational functions (the personal incomes of officials and supervisors, for example, should be

3-5 times higher than the average personal income), positions in the OUR, formal qualifications, and so forth. The increase in the nontaxable portion of the total income of citizens actually frees from taxes the majority of officials in socio-political communities and organizations, as well as the majority of economic leaders.

Personal incomes of individuals in OURs are also taxed proportionally. This also applies to contributions out of personal incomes. A question arises as to why, in matters of determining personal incomes and taxes on contributions paid out of them, the Law on Associated Labor has been applied almost nowhere. In that respect the Law on Associated Labor is clear. Personal income contains not only a net amount, but also all taxes and contributions for sustaining general and common needs. This means that the personal incomes of individuals in every OUR should be determined in the so-called gross amount. In that case each increase in the rates of taxes and contributions would result in a decrease in the net personal income of each worker as an individual. Under those conditions contribution rates would not be increasing as relatively easily as they do at present. However, when personal income is determined as a net (clear) amount, workers are not directly interested in the amounts of contributions, because the increase in the latter does not reduce their personal income directly and immediately. This certainly explains their insufficient involvement in the work of communities of interest.

The extent to which the Yugoslav taxation apparatus contains social motives is also illustrated by the system of taxing income of life-annuities of individuals. When it comes to pooling the resources of one basic organization with the work and resources of another, the motive is not one of participation in joint income. Such participation, namely, is labeled as rentier-like and "capital relation." When the point in question is the income of life-annuities of individuals, the solutions are diametrically opposed. This is also demonstrated by the case of savings in dinars as well as in foreign currency. Ours is probably one of the few countries which does not tax income earned from interest. The extent of its significance, both in a quantitative respect and from a social aspect, is demonstrated by the interest rates on foreign currency savings deposits. They approach the sum of \$500 million annually, thus amounting to 50 percent of the gross inflow of foreign currency from tourism. The holders of foreign currency accounts do not pay tax on these resources. The same applies to savings deposits in dinars.

#### Tax Structure

The basic characteristics of the Yugoslav system of taxation are best illustrated by the structure of budgetary receipts of all sociopolitical communities. The structure of receipts is dominated by the turnover tax (with a share of over 50 percent), as well as custom and import duties, with a share of about 20 percent. Direct (immediate) taxes are practically non-existent.

	1	2	3
	Vrsta poreza	Iznos u milionima dinars	%, ukupno
4	Ukupno	145.453	100
5	Porez na dohodak i iz ličnog dohotka	26.403	18.26
6	- Na dohodak iz privrede	13.213	9.07
7	- Na dohodak iz neprevrede	1.132	0.78
8	- Iz ličnih dohodaka iz privrede	5.481	3.76
9	- Iz ličnih dohodaka iz neprevrede	2.572	1.77
10	- Ostali	4.202	2.88
11	Porezi na promet	74.771	51.34
12	- Osnovni porez na promet	49.546	34.02
13	- Posebni porezi na promet	24.121	16.56
14	- Porezi na imovina i prihodi od imovine	1.102	0.76
15	Takse	2.418	1.72
16	Carine i posebne dažbine	16.948	11.66
17	- Carine	16.984	11.66
18	- Od građana	477	0.33
19	- Posebne dažbine	1.424	0.98
20	- Posebna taksa i letarina	11.063	7.67
21	Prihodi po posebnim propisima	1.216	0.83
22	Prihodi organa uprave i ostali prihodi	1.617	1.11

Table 1. The Structure of Receipts of Sociopolitical Communities in 1978

Key:

- |  |   |
|--|---|
| 1. Type of tax                                 | 14. Property taxes and receipts from property               |
| 2. Amounts in millions of dinars               | 15. Stamp duties  |
| 3. Share                                       | 16. Customs and special duties                              |
| 4. Total                                       | 17. Customs duties  |
| 5. Income tax and personal income tax          | 18. From citizens   |
| 6. On economic income                          | 19. Special duties  |
| 7. On noneconomic income                       | 20. Special stamp duty and storage                          |
| 8. Out of personal income from the economy     | 21. Receipts according to special regulations               |
| 9. Out of personal income from the noneconomic | 22. Receipts of organs of administration and other receipts |
| 10. Others                                     |   |
| 11. Turnover taxes                             |   |
| 12. Basic turnover taxes                       |   |
| 13. Special turnover taxes                     |   |



The character of income taxes and personal income taxes is partially that of direct taxes, as they represent a kind of taxation of business results. The fact that the category of income, from the viewpoint of OURs (i.e. the taxpayers) does not actually mean business results, is another question. This also applies to personal incomes. That is to say, personal incomes do not represent true results of working in an OUR, because they are also paid by organizations which operate at a loss for many years.

All other taxes, whose share in the structure of budgetary receipts is 81.74 percent, are in the nature of classic indirect taxes. This also refers to turnover taxes, stamp duties, custom and import duties. The structure of budgetary receipts in fact demonstrates that Yugoslav sociopolitical communities are financed from turnover taxes. Such a high percentage in their share is present in almost no other country. It is a fact, however, that the turnover tax represents regressive taxation, i.e. a relatively greater tax burden on citizens who earn lower income.

While the motivation for high retail taxes in capitalism is understandable (it is a matter of transferring the tax burden to the working class and low-income citizens), the question as to the motivation for retail taxes under our conditions remains, especially when it is known that their share in total receipts of all sociopolitical communities amounts to 50 percent. The turnover tax has a number of advantages from a budgetary point of view. Sociopolitical communities do not take the risk for the quality of operations of OURs in the economy.

It is a matter of yet another motive. The point in question, namely, is the fact that the turnover tax is not included in the total receipts and income of OURs, and, technically, it is not expressed as a burden on OURs in the economy. Their influence on prices, however, results in pressures for higher incomes.

Similar solutions are also present in the system of taxes and contributions for financing self-managing communities of interest in the social activities. Thus, for example, a portion of receipts for disability and pension insurance is covered by contributions out of the incomes of OURs. According to the existing logic of the system of taxes and contributions, these expenditures could also be financed out of turnover taxes. There would be no essential differences, while the economy would be visibly unburdened.

It is certain that changes in the system of taxes and contributions would not yield spectacular results, especially under conditions where sociopolitical communities, by way of direct control, and even price setting, influence the income of OURs to a considerably greater extent than the effects which might be achieved by implementing an adequate taxation policy. This, however, does not mean that changes in the system of taxes and contributions are unnecessary.

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CSO: 2800

## ELECTRIC POWER PLANS FOR METOHIJA AREA

Belgrade PRIVREDNI PREGLED in Serbo-Croatian 7 Aug 79 p 8

[Unsigned article: "Transmission Line Construction Stepped Up"]

[Text] Work organizations in the Metohija economy have in past years suffered considerable losses because of frequent interruptions in the supply of electric power. Nor has the issue of regular and quality electric power supply been removed from the agenda with the construction of new capacities in this region. After all, construction of the heavy truck tire factory at Suva Reka will soon begin, several facilities which will finalize a part of the output of Trepca lead are being put into operation at Djakovica as part of the Metalik work organization, and construction of a stationary battery factory has begun at Pec, once again within the Trepca program of new facilities, which will tend to increase power consumption even more.

In the past the Metohija region has been furnished electric power over a 110-kv transmission line, in a ring which starts at the distribution installation of the Kosovo Thermal Electric Power Plant and passes through the 110-kv substations at Vucitrn, Valac, Pec, Djakovica, Prizren, Suva Reka and Urosevac. But because of their small load capacity the present transmission lines have not been able to carry the necessary amounts of electric power to this region, and Elektrokosovo has decided to build a 220/110-kv substation at Prizren with an installed capacity of 2 x 150 MW, capable of giving this region an ample supply of good electric power. At the same time a 220-kv transmission line is being built from the 400/220-kv distribution at Obilic to Prizren. The estimated cost of the transmission line and substation is 170 million dinars. Most of the earthmoving and concrete work have already been completed at the facility. The iron structure is now being erected and the control building built. The equipment for the substation has been ordered, and it is expected to be completed by the middle of next year. By that time the transmission line whose construction began just recently will also be completed.

Lively activity is continuing at Elektrokosovo to build and put on line several other new facilities. A month ago a 110/35-kv substation was put into operation with an installed capacity of 2 x 31.5 MW, and this month a

110/10-kv substation with an installed capacity of 2 x 31.5 MW will be put on line in Pristina. Also during this month a 110/35-kv substation with an installed capacity of 20 MW will go on line at Vucitrn to meet the needs of the galvanized sheet metal factory at Vucitrn. Elektrokosovo has also begun construction of a load control center to meet the needs of electric power facilities in the province of Kosovo. A facility is being built at Pristina, and the work has been let out to the Ramiz Sadik Construction and Industrial Combine. The date for completion of this facility is the end of 1980, and the cost of the construction work which has been let out is 120 million dinars.

With the completion of this facility and the facilities under construction, says Mitar Samardzic, general director of Elektrokosovo, an important stage will be rounded off in development of this organization, that stage will help to eliminate the bottlenecks in distribution and transmission capacity for electric power in Kosovo, which certainly will facilitate the unhampered operation of economic facilities in the province.

7045

CSO: 2800

## NUMBER OF COOPERATIVES, OTHER FORMS OF FARM ASSOCIATION

Belgrade GLASNIK POLJOPRIVREDNE PROIZVODNJE, PRERADE I PLASMANA in Serbo-Croatian Jun 79 p 37

NUMBER OF AGRICULTURAL COOPERATIVES, ORGANIZATIONS OF COOPERATORS, OURs (Basic Organizations of Associated Labor) FOR COOPERATION, IN THE SFRY THE END OF 1978

1) Republika- Pokrajina	2) Broj zem- ljorad. sa drugim	3) Broj osnov. radnih or- ganizacija	4) Ukupno radnih i OZZ	5) Broj osnovnih organizacija kooperativ	6) Broj OURs sa kooper- acijama	7) Broj radnih organiz. kooper.
Bosna i Hercegovina	30	37	67	117	—	9
Crna Gora	8	—	8	1	15	1
Hrvatska	225	—	225	—	104	—
Makedonija	81	—	81	18	8	—
Slovenija	42	—	42	21	—	1
Srbija bez pokrajina	128	63	191	182	132	3
Vojvodina	—	—	—	—	234	—
Kosovo	18	12	30	15	7	—
S F R J	532	112	644	354	500	14

16) U BiH ima i 96 drugih OUR-a koje udružuju zemljoradnike i sarađuju sa njima, a u tabeli nisu iskazani.

## Key:

1. Republics, Provinces
2. Number of agricultural cooperatives
3. Number of basic cooperative organizations
4. Total number of cooperatives and basic cooperative organizations
5. Number of basic organizations of cooperators
6. Number of basic organizations of associated labor for cooperation
7. Number of work organizations of cooperators
8. Bosnia-Hercegovina
9. Montenegro
10. Croatia
11. Macedonia
12. Slovenia
13. Serbia proper
14. Vojvodina
15. Kosovo
16. In Bosnia-Hercegovina there are also 96 other basic organizations of labor which associate farmers and cooperate with them; these are not shown in the table.

## DATA ON SOCIALIZED AGRICULTURAL SECTOR

Belgrade EKONOMSKA POLITIKA in Serbo-Croatian 2 Ju<sup>l</sup> 79 p 35

[Unsigned article: "Increase in the Number of Organizations"]

[Text] Last year there were 2,789 agricultural organizations operating in Yugoslavia with a labor force of 202,000, 142,000 employed in agricultural activity. Of the 21,000 agricultural specialists, 9,500 had completed junior or senior postsecondary education. There were 3,000 veterinarians and 11,000 economists. At the beginning of last year agricultural organizations had 2,303,366 hectares of land, of which 1,244,995 hectares were plowland and gardens, 39,000 hectares orchards, 36,000 hectares vineyards, 112,000 hectares meadows, 818,000 hectares pastures, 19,000 hectares fish ponds, 32,000 hectares covered with standing water and reeds, and 36,000 hectares were leased. During the year landholdings were increased by 24,228 hectares: 11,456 hectares from development of new land, 11,156 hectares by purchases from private farmers, and 1,607 hectares by recovery of wrongfully appropriated land.

The livestock population consisted of 434,000 head of cattle, including 91,000 dairy cows and heifers in calf, 1,445,000 hogs, 247,000 sheep, 3,000 horses and 20,606,000 head of poultry. Total weight gain was 491,615 tons: 123,026 tons for cattle, 235,561 tons for hogs, 4,129 tons for sheep, and 128,899 tons for poultry. The output of cow's milk was 350 million liters (4,449 liters per cow), the sheep's milk output was 4.3 million liters (30 liters per ewe), and wool production was 417 tons (1.8 kg per sheep).

Organizations possessed 25,972 tractors, 10,735 combines and 3,613 trucks.

Last year agricultural organizations were engaged in cooperation with 881,000 private farmers: 534,000 in cropping and market gardening, 432,000 in animal husbandry and 54,000 farmers in raising perennial plantations. Cattle weighing 231,220 tons, hogs weighing 295,326 tons, sheep weighing 784 tons and poultry weighing 98,574 tons were delivered from the fattening of livestock organized in this manner.



In the period between 1974 and 1978 the number of agricultural organizations increased from 1,944 to 2,879, the labor force dropped from 207,000 to 202,000, farmland increased from 2,166,000 to 2,303,000 hectares, the weight gain of livestock increased from 413,000 to 492,000 tons, the number of tractors increased from 25,125 to 25,972, and the number of combines decreased from 10,915 to 10,094.

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